Pacific Salmon Commission

2003/2004 Nineteenth Annual Report

Pacific Salmon Commission

Established by Treaty between Canada and the United States
March 18, 1985
for the
conservation, management and optimum production of Pacific salmon

Nineteenth Annual Report 2003/2004

Vancouver, B.C.
Canada

June 2005

PACIFIC SALMON COMMISSION

ESTABLISHED BY TREATY BETWEEN CANADA
AND THE UNITED STATES OF AMERICA
MARCH 18, 1985

600 – 1155 ROBSON STREET
VANCOUVER, B.C. V6E 1B5
TELEPHONE (604) 684-8081
FAX (604) 666-8707

Our File:

Your File:

Letter of Transmittal

In compliance with Article II, Paragraph 14 of the Treaty between the Government of Canada and the Government of the United States of America concerning Pacific salmon, it is my pleasure as Chair of the Pacific Salmon Commission to present my compliments to the Parties and to transmit herewith the Eighteenth Annual Report of the Commission.

This report summarizes the activities of the Commission for the fiscal year April 1, 2003 to March 31, 2004.

On June 3, 1999 the Parties signed a comprehensive long-term agreement under the Pacific Salmon Treaty. The agreement established abundance-based fishery regimes for the major interception fisheries in the United States and Canada. The arrangements are all for ten years, except those for Fraser River sockeye and pink salmon, which are for 12 years. The agreement also established two bilaterally-managed regional funds, and included provisions to enhance bilateral cooperation, improve the scientific bases for salmon management and apply institutional changes to the Pacific Salmon Treaty. A summary of the agreement is available on the PSC website: www.psc.org.

Reports on the results of the 2003 fishing season presented by the Parties and on meetings of the Commission, the Standing Committee on Finance and Administration and the Northern and Southern Fund Committee are presented in summary. Executive summaries of documents prepared by Pacific Salmon Commission staff and the joint technical committees during the period covered by this report are also presented.

The Auditors' report on financial activities of the Commission during the fiscal year April 1, 2003 to March 31, 2004, as approved by the Commission, is also included in this report.

Yours truly,

Mr. Frank L. Cassidy, Jr.
Chair

106-00156/

PACIFIC SALMON COMMISSION

OFFICERS for 2003/2004

Chair	Mr. Larry Cassidy
Vice-Chair	Dr. John Davis

COMMISSIONERS

United States	**Canada**
Mr. Ron Allen	Mr. Ron Fowler
Mr. David Bedford	Mr. Hubert Haldane
Mr. Larry Rutter	Mr. Gerry Kristianson
Mr. Rollie Rousseau	Mr. Rich Chapple
Mr. Jev Shelton	Mr. Garnet Jones
Mr. David Balton	Mr. Russ Jones
Mr. Olney Patt Jr.	Mr. Paul Macgillivray

SECRETARIAT STAFF

Executive Secretary	Mr. Don Kowal
Administrative Officer	Mr. Ken Medlock
Chief Biologist	Mr. Mike Lapointe

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INTRODUCTION

Interception of Pacific salmon bound for rivers of one country in fisheries of the other has been the subject of discussion between the Governments of Canada and the United States of America since the early part of this century. Intercepting fisheries were identified through research conducted by the two countries on species and stocks originating from Alaska, British Columbia, Washington, Oregon and Idaho. The results of this research identified that Alaskan fishers were catching salmon bound for British Columbia, Idaho, Oregon and Washington. Canadian fishers off the West Coast of Vancouver Island were capturing salmon bound for rivers of Washington and Oregon. Fishers in northern British Columbia were intercepting salmon returning to Alaska, Washington, Oregon and Idaho, and United States fishers were catching Fraser River salmon as they traveled through the Strait of Juan de Fuca and the San Juan Islands towards the Fraser River.

Management of stocks subject to interception became a matter of common concern to both Canada and the United States. A mechanism to enable the countries to reap the benefits of their respective management and enhancement efforts was required. That mechanism is now provided through the Pacific Salmon Treaty, which entered into force upon the exchange of instruments of ratification by the President of the United States of America and the Prime Minister of Canada on March 18, 1985.

The Pacific Salmon Commission, guided by principles and provisions of the Treaty, establishes general fishery management regimes for international conservation and harvest sharing of intermingling salmon stocks. Each country retains jurisdictional management authority but must manage its fisheries in a manner consistent with the provisions of the Treaty. Implementation of the principles of the Treaty should enable the United States and Canada, through better conservation and enhancement, to prevent overfishing, increase production of salmon, and ensure that each country receives benefits equivalent to its own production. The Commission also serves as a forum for consultation between the Parties on their salmonid enhancement operations and research programs.

The organizational structure of the Commission is currently focused on four geographically oriented panels. The terms of new Treaty arrangements signed by the Parties in June, 1999 provided for the creation of a new Transboundary Panel. The Transboundary Panel's stocks of concern originate from the Alsek, Stikine and Taku River systems. The Northern Panel's stocks of concern are those which originate in rivers situated between Cape Suckling in Alaska and Cape Caution in British Columbia. The Southern Panel's stocks of concern are those which originate in rivers located south of Cape Caution, other than Fraser River sockeye and pink salmon. The Fraser River Panel has special regulatory responsibilities for stocks of sockeye and pink salmon originating from the Fraser River.

The functions of panels are to review annual post-season reports, annual pre-season fishing plans and ongoing and planned salmonid enhancement programs of each country, and to provide recommendations to the Commission for development of annual fishery regimes in accordance with the objectives of the Treaty. These plans, once adopted by the Commission and the governments, are implemented by the management agencies in each country.

The Fraser River Panel, in addition, has been accorded special responsibility for in-season regulation of Fraser River sockeye and pink fisheries of Canada and the United States in southern British Columbia and northern Puget Sound, in an area designated as Fraser River Panel Area Waters. Scientific and technical work is conducted for the Panel by the Fishery Management Division of the Commission's Secretariat staff.

Negotiations designed to lead to agreed fishery regimes were conducted at the government-to-government level commencing in the spring of 1998. A comprehensive agreement was reached by the Parties on June 30, 1999.

As a result of the agreement, long-term fishing arrangements are in place for ten years, except for Fraser River sockeye and pink salmon, which is a 12-year arrangement.

With fishery arrangements in place, the meeting agendas for the Commission have concentrated on implementation of the elements of the new arrangements that will improve fisheries management and aid the countries efforts to recover weakened stocks. These provisions include establishment of two bilaterally-managed restoration and enhancement funds, provisions to enhance bilateral cooperation, improvements to the scientific basis for salmon management and application of institutional changes to the Pacific Salmon Commission.

On December 4, 2002, the Parties signed an international agreement detailing a cooperative approach to conservation of salmon stocks originating in the Yukon River in Canada. The agreement will be included as an Annex of the Pacific Salmon Treaty. As such, the Yukon River Salmon Agreement is separate from the Pacific Salmon Treaty because it sets out a distinct regime for Yukon River salmon, while adhering to the broad science-based management principles of the Pacific Salmon Treaty.

The Commission meets at least once annually and conducts its business between meetings through its permanent Secretariat located in Vancouver, British Columbia. In the period April 1, 2003 to March 31, 2004, the Commission met on three occasions:

1. Commission Executive Session
   October 21-23, 2003 – Sunriver, Oregon.

2. Post-Season Meeting of the Commission and Panels
   January 14-16, 2004– Portland, Oregon

3. Nineteenth Annual Meeting of the Commission
   February 9-13, 2004 – Vancouver, B.C.

This, the Nineteenth Annual Report of the Pacific Salmon Commission, provides a synopsis of the activities of the Commission and its subsidiary bodies during its Nineteenth fiscal year of operation, April 1, 2003 to March 31, 2004.

Activities of the Commission

PART I
ACTIVITIES OF THE COMMISSION

A. EXECUTIVE SESSION OF THE PACIFIC SALMON COMMISSION
October 21-23, 2003, Sunriver, Oregon

The Commission met three times in bilateral Executive Session during this meeting period.

Mr. Larry Cassidy was introduced as the newly appointed U.S. Commissioner

The Commission received an update about the formal review conducted by Fisheries and Oceans Canada into the 2002 Fraser River sockeye fishing season. A final report tabled in late March 2003 contained fourteen recommendations based around five key areas of concern. Mr. Paul Ryall of Fisheries and Oceans Canada gave a presentation about the implementation of the recommendations.

Mr. Larry Rutter presented a white paper on monitoring and evaluation needs. The paper was written in response to concerns about the diminishing quality of the systems used to manage chinook and coho fisheries, centering upon the quality of the Coded Wire Tag (CWT) system.

The Commission held several lengthy discussions about the issues raised in the paper. The Commission agreed to reiterate to the agencies the importance of submitting mass marking and mark selective fishery proposals and discussed how to best carry out an evaluation of the CWT system. It was agreed that the Committee on Scientific Cooperation (CSC) be directed to advise the Commission on how to best undertake a review of the CWT program.

The Commission discussed considerations for future planning. It was agreed that each National Section would generate a list of key issues that require focus from a planning and priority perspective. A small group of Commissioners would then meet bilaterally and develop an agreed upon list of three or four key issues. The list would be discussed at the Commission's January meeting.

The Commission reviewed the annual work plans submitted by the Panels and Committees and adopted instructions to the Panels and Committees.

The Parties identified the slate of PSC officers who would assume their roles once the meeting was adjourned.

Dr. Richards of the CSC provided a brief update on the work done in 2003 on investigating the problem of high mortality of late-run Fraser River Sockeye. The three goals of the 2003 studies were to monitor river entry timing, to estimate in-river mortality by stock, and to continue to assess factors that were contributing to the causes of the early return of late run sockeye. The Committee hoped to provide an update on the preliminary results of the work in January.

B. MEETING OF THE COMMISSION AND PANELS
January 14 - 16, 2004, Portland, Oregon

The Commission met four times in Executive Session during this meeting.

Mr. David Bedford, Deputy Director of Alaska Department of Fish and Game, was introduced as the newly appointed U.S. Commissioner.

The Parties exchanged post-season reports.

Technical Dispute Settlement Board (TDSB) roster submissions were discussed. Both Parties were in the process of compiling lists of potential nominees to serve on a Technical Dispute Settlement Board. It was agreed that each Party would compile a list of nominees and verify that the people named were willing to stand. The Commission Chair and Vice Chair would work together to consolidate the lists into a single roster which would be brought back to the respective National Sections for comment. The Commission would then bring forward a list to be tabled as the final roster.

The Commission discussed a proposal on planning and priorities. It was agreed that the Commission establish a process whereby the Parties to the Pacific Salmon Treaty, acting through the Pacific Salmon Commission, can explore means to improve the effectiveness and efficiency of their respective programs that support achievement of Treaty obligations and that the Commission should constitute a working group composed of Mr. Rutter and Mr. Macgillivray to bring forward the implementation details.

Dr. Richards of the Committee on Scientific Cooperation (CSC) presented a proposal for a review of the coastwide Coded Wire Tag Program (CWT) developed by the CSC in conjunction with Commissioners Rutter and Kristianson. The first component of the proposal was a workshop that would be held to review the CWT program and to consider alternate techniques. The second component was the convening of a panel of experts to follow through on recommendations that came out of the workshop. Dr. David Hankin of the CSC would act as workshop chair.

The Commission approved the proposal to proceed with the development of an expert panel and a workshop to review the CWT program and related issues.

Dr. Brent Hargreaves and Dr. Gary Morishima, co-chairs of the Selective Fisheries Evaluation Committee (SFEC) provided the Commission with an update on the activities of the Committee.

The Committee submitted a report to the Commission in the fall that summarized the first year that SFEC reviewed Mark Selective Fisheries (MSF's) and Mass Marking (MM) proposals submitted by the agencies. From the work that it had carried out, the Committee learned that it would not be possible for SFEC to provide the Commission with the level of advice that it had hoped regarding the proposals and the impact of MSF's on the CWT system prior to the conduct of the fisheries. The domestic planning process was not complete prior to the annual PSC meeting in February during which the Commission would review the Committee's recommendations about the proposals.

SFEC met in December discussed what role it should take to provide a useful service to the Commission. The Committee came to the conclusion that it should re-focus its activities. Dr. Hargreaves and Dr. Morishima were in the process of drafting new terms of reference for SFEC for consideration by the PSC. The revised terms of reference would be available for the Commission discussion in February.

The Commission heard a report from the Chinook Interface Group about its activities. The Commission agreed to adopt instructions to the Chinook Technical Committee regarding the establishment of biological escapement goals.

The Commission heard reports about the activities of the Northern, Southern, Fraser, and Transboundary Panels.

C. PACIFIC SALMON COMMISSION ANNUAL MEETING

February 9-13, 2004, Vancouver, B.C.

There were three bilateral sittings of the Commission Executive held during this meeting period.

It was announced that Mr. Olney Patt of the Columbia River Inter-Tribal Fisheries Commission had been officially appointed as a U.S. Commissioner.

The U.S. tabled its 2002 report on enhancement activities and Canada tabled its report on 2003 enhancement activities.

The Parties agreed to share the lists of nominees to the Technical Dispute Settlement Board that each had confirmed to date. The Commission Chair and Vice Chair would collaborate between sessions to refine the roster.

The Commissioners were presented with a revision of the proposal on planning and priorities that was tabled in January. It was agreed that Commissioners Rutter and MacGillivray would continue to work together to finalize the proposal. The Commission would endorse and formalize the process at the October 2004 session.

Dr. Richards of the Committee on Scientific Cooperation (CSC) provided an update on the progress made in establishing an expert panel and planning a workshop about Coded Wire Tagging (CWT) monitoring and evaluation. The expert panel would attend the workshop, assemble views and report back to the Commission It would be structured around three themes: 1) What advice about the CWT program is required by the PSC and the agencies? 2) A technical review of the CWT program including issues around the adequacy of the data provided, the current levels of uncertainty with the data and the program's overall costs and; 3) A review of alternate techniques that might replace the CWT program. The workshop was tentatively scheduled to be held from June 7 – 10 in Seattle.

The Commission supported the CSC's recommendation that the PSC convene a technical workshop in late spring on Fraser River late run sockeye studies where researchers would present their results; synthesize the information to date, and plan next steps.

The Commission adopted a policy statement and revised terms of reference for the Selective Fisheries Evaluation Committee. (Appendix C)

Mr. Angus MacKay, Endowment Fund Coordinator, presented the "Annual Report of the Southern Boundary Restoration and Enhancement Fund and the Northern Boundary and Transboundary Rivers Restoration and Enhancement Fund for the year 2003."

The Commission adopted the Annual Report of the Standing Committee on Finance and Administration.

Mr. Andrew McGregor, Chair of the Transboundary Panel, reported that the Panel had come to agreement on Transboundary sockeye enhancement and to aspects of a proposal by the U.S. for a Stikine River subsistence fishery. The original proposal was for sockeye, chinook and coho fisheries. The Panel agreed to allow a targeted fishery for sockeye and agreed that the terms of a directed chinook fishery would be dependent upon the results of ongoing negotiations regarding abundance based management regimes and harvest sharing of chinook salmon on the Stikine. However, the Panel did not come to an agreement regarding the coho subsistence fishery on the Stikine.

Because it was apparent that there would not be enough time to come to resolution on such an important issue, it was agreed that an Extraordinary Session of the Commission and the Transboundary Panel would be held within the next few months. Executive Secretary Kowal was directed to begin planning the session.

Mr. Terry Williams and Mr. Ed Lochbaum, Chair and Vice Chair of the Southern Panel reported on the Panel's activities. The Panel reached an agreement on chum fisheries. The key issues addressed in the Agreement were trigger mechanisms, payback provisions, opening dates, conservation, and the setting of the base catch ceilings.

Activities of the Standing Committees

PART II
ACTIVITIES OF THE STANDING COMMITTEES

A. MEETINGS OF THE STANDING COMMITTEE ON FINANCE AND ADMINISTRATION

1. Committee Activities

The Committee met on August 12, 2003 by conference call and December 4, 2003 in Vancouver, BC to consider a range of financial and administrative issues. The Committee's deliberations in August were focused on the funding shortfall from the United States. In December the focus was primarily on a review of the Commission's current budget proposals for FY 2004/2005 and a budget forecast for FY 2005/2006 and beyond.

The Committee approved, subject to resolution of the 2003-2004 United States funding, approval by the Parties, the Commission budget at the contribution level of C$1,492,117 per party (Appendix B) with expenditures of C$3,202,873. This represents a decreased contribution per party over last year of C$14,325. The Committee **recommended** acceptance of this budget. The new budget does not provide for any additional programs in 2004/2005. During this review it was indicated that cuts to programs had already been made in order to produce this budget.

The Committee also reviewed staff projections of expenditures for the balance of the current fiscal year. The staff reported, subject to full funding being received from the United States for 2003- 2004, a forecast carry-over of C$208,639 to next year. It was **recommended** that the $208,639 carryover from 2003/2004 be carried to fiscal 2004/2005 to offset costs of programs initiated in this fiscal year.

The Committee reviewed the status of the revolving test-fishing fund and recommended uses of any surplus funds that may be generated over the balance of the current fiscal year as a result of final price adjustments.

The Executive Secretary reviewed the projected budgets for 2005/2006 and 2006/2007.

The Committee reviewed the meeting schedule and accepted the proposal to have the October 18-20, 2005 Executive Session in Juneau, Alaska. Portland was chosen for the January 9-13, 2006 and February 13-17, 2006 was chosen for the 21st Annual Meeting in Vancouver. It was suggested that Kelowna or Penticton, BC be the site for the Executive session from Oct 24-26, 2006.

2. Secretariat Staffing Activities

A list of Secretariat staff employees as of March 31, 2004 is presented in Appendix C.

An updated membership list for panels, standing committees, joint technical committees and ad hoc working groups as of March 31, 2004 is presented in Appendix D.

B. MEETINGS OF THE STANDING COMMITTEE ON SCIENTIFIC COOPERATION

The Committee on Scientific Cooperation (CSC) continued to identify the early return of late-run Fraser River sockeye as a potentially serious concern for the future of the Fraser sockeye resource. Considerable progress had been made in documenting this phenomenon over the previous two years. However, there was only a slightly better understanding of the mechanisms behind the early return and there was a need to prepare for the possibility of elevated mortalities in 2004 and 2005.

A full report on late-run research was not possible at the time since analysis of the 2003 physiological samples was not yet complete. Based on forecasts run sizes the CSC did not anticipate any major field programs on late-run Fraser sockeye in 2004. Instead, the focus would be on the analysis of results from samples collected in 2002 and 2003.

The CSC recommended that the PSC convene a technical workshop in late spring where researchers could present their results, synthesize the information to date, and plan next steps. The hypotheses for late-run behaviour could be re-examined to identify those that held the most promise for ongoing research.

Subject to other priorities, the CSC recommended continuation of special funding for the late-run research program that would allow the processing of 2002-2003 physiological samples and the continuation of some promising oceanographic work.

The CSC had begun to work on a review of the coded wire tag (CWT) program. The Committee worked with Commissioners Rutter and Kristianson to coordinate a review of the CWT program, along with a consideration of potential alternative technologies.

A workshop was tentatively scheduled to be held in June 2004 to examine CWT monitoring and evaluation. It would be structured around three themes: 1) What advice about the CWT program is required by the PSC and the agencies? 2) A technical review of the CWT program including issues around the adequacy of the data provided, the current levels of uncertainty with the data and the program's overall costs and; 3) A review of alternate techniques that might replace the CWT program. An expert Panel would be convened to attend the Workshop, assemble views and report back to the Commission and Parties.

C. MEETINGS OF THE NORTHERN AND SOUTHERN FUND COMMITTEES

In fiscal year 2003/04 the Northern and Southern Fund Committees agreed that given the congruent nature of their agendas; global economic conditions and the status of the Fund, it was appropriate to meet not separately, but together as a Joint Fund Committee.

The first meeting of the year was held via conference call on May 5th, 2003. The dollar cost averaging strategy was further debated with the general consensus being that a 6 month phase-in period with Brandes would be suitably conservative and risk averse given the prevailing market conditions. A motion to this effect was passed unanimously. Hewitt and Associates agreed to prepare a discussion document suggesting alternative investment management firms to MFS for consideration at the next meeting.

The second meeting of the year was an in person meeting held on June 2nd, 2003. There was a brief discussion on the operating budget. Hewitt and Associates presented their first quarter report, in which the Fund returned a disappointing –8.3% and some attention was paid to the influence on the Fund of the strong Canadian dollar. On the subject of MFS, Hewitts' recommendation was to not fire the firm because they were performing acceptably in a difficult market environment and an adequate period of time had not elapsed in order to afford a fair evaluation of the manager's performance. A majority of the Committee agreed with this analysis. A debate on active and passive Bond manager alternatives followed. The meeting closed with a review of a spreadsheet model forecasting potential funding scenarios under a variety of different financial assumptions.

At the third meeting held by telephone conference call on September 12th, 2003, Hewitt and Associates presented their second quarter report, noting that equities had rallied during the quarter and the bond portfolio had performed well. The pro's and con's of the MFS pooled fund option were debated. The active vs. passive bond issue debate was deferred to a later date. Some potential topics for discussion at the upcoming annual Fund Manager reviews in November were discussed.

The fourth meeting of the year was marked by the annual Fund investment manager performance report and interviews held at the PSC office on November 4th and 5th, 2003. The Committee was generally satisfied with the performance and report from Barclays Global Investors. The interview with Putnam Investments led to a very lengthy debate concerning the company's recent difficulties with U.S. mutual fund regulators. In particular, the Committees were very concerned about the discoveries of unethical trading activity by both clients and key staff of Putnam. Senior staff changes and uncertainty about the potential impacts on future returns that might result for existing and prospective investors created by Putnams' improprieties were also a significant concern. Since the situation with Putnam had only come to light just prior to the meeting and it appeared that steps were being taken by the company to rectify the situation, a decision was made to retain Putnam for the moment and to request additional information for consideration by the Committees in January. The committees were satisfied with the report and performance of Brandes Investment Partners. The interview with MFS also triggered vigorous debate, but this time concerning the company's performance, the outcome of which was a decision to retain the firm and re-evaluate in November 2004. In the meantime staff were instructed to initiate a transfer of assets from the MFS segregated account into an available pooled fund, to benefit from a saving in management fees.

The Joint Committee's last meeting was a conference call held on January 6th, 2004. John Myrah of Hewitt and Associates provided an assessment of his firms' understanding of the current situation at Putnam Investments. He reviewed the regulatory issues raised by the SEC investigation of Putnam and Putnam's reaction to the investigations findings. He discussed Putnam's performance over the short and long terms; their position relative to their peers and their investment style. He also took a number of questions from Committee members regarding the costs to the Fund of transferring out of Putnam as an investment manager. The Committee tasked Mr. Myrah with collecting further information on performance and transfer costs and agreed to ask Putnam to send its representatives to meet with the Joint Committee when they next met in May.

Activities of the Panels

PART III
ACTIVITIES OF THE PANELS

A. FRASER RIVER PANEL

The Fraser River Panel completed the 2003 fishery management plan for Fraser River sockeye and pink salmon in Panel Area waters on June 5, 2003. The Panel carried out its in-season fishery management responsibilities as per Annex IV, Chapter 4. Commission staff conducted its regular in-season assessment programs and reported results to the Panel.

The Panel met in bilateral session during the January and February 2004 meetings of the Commission to review the results of the 2003 fishing season, to receive reports from Canada on spawning escapements and to discuss issues of concern for the 2004 fishing season. Commission staff reviewed the concerns regarding the potential for continued early upstream migration behaviour of Late-run sockeye and identified specific areas of fishery impacts.

B. NORTHERN PANEL

The Bilateral Northern Boundary Panel met in January, 2004. During this Post-Season meeting, the Panel received post fishery reports for the Northern Boundary area fisheries from the fishery managers of both parties, as well as a presentation by DFO personnel on the sockeye salmon forecasts for 2004 for the Nass and Skeena Rivers.

The Northern Panel accepted the revised northern boundary area sockeye reconstructions for the period 1982 to 2002, as provided by the Bilateral Northern Boundary Technical Committee.

Consistent with the revised 1999 Treaty Annex Appendix IV, Chapter 2, Section 2(c), the Northern Panel agreed that the revised reconstruction methodology and data will be used for the post-season accounting for the period 1999 to 2002 and subsequent years. The annual sockeye AAH catch shares remain as specified in Chapter 2 (District 101 Gillnet 13.8% of Nass AAH; District 104 seine 2.45% of the combined Nass and Skeena AAH).

The Northern Panel accepted the revised methodology as the best available under the circumstances while agreeing that there is still a significant amount of uncertainty.

To minimize the uncertainty in future reconstructions the bilateral northern panel recommends that:

- Accurate sockeye catch and effort data for all fisheries, broken down by the appropriate sub-areas, need to be available electronically in a common database on a timely basis.
- Sampling and scale pattern or DNA analysis of Boundary Area sockeye catches need to be funded on a continuing basis.
- For fisheries with significant mixed-stock sockeye catches, direct stock composition estimates need to be compared on an annual basis.
- Efforts to develop accurate early-season abundance estimates, and a method of distributing these to managers in a timely manner, need to continue.
- Methods of documenting total escapement estimates need to be formalized.

C. SOUTHERN PANEL

During the period of April1/03 to Sept. 30/03 the Canadian alternate (Mr. Barry Rosenberger) assumed the Vice - chair duties for Southern panel activities. One of the Panel objectives for this period was to reach an interim chum salmon agreement for the 2003 fall fishery. This was viewed by both parties as a short term, one off arrangement leading to a more permanent framework for 2004 and beyond. There was one chair to chair meeting and email exchanges from June through September. There was no agreement on wording changes for 2003 but with an understanding of each countries' fisheries and agreement to meet post season with defined specific objectives. A further chair to chair meeting occurred in December/03 in which the issues were further developed and a negotiation schedule set for the January/04 (Portland) bilateral session. During the January session full bilateral discussions were held and it was concluded that agreement could most likely be secured in the February/04 bilateral session to be held in Vancouver. Agreement was secured in the February bilateral session and resulted in a document entitled "Commission Guidance to the Southern Panel on the Management of Southern Chum Fisheries". The purpose of the document provides Commission direction to the Southern Panel on the conduct of southern chum salmon fisheries for the years 2004 to 2008. This direction is not intended to replace Annex IV, Chapter 6 of the Pacific Salmon Treaty.

The Southern Panel met again bilaterally in March/03 for their annual preseason fishery planning session to exchange information for those fisheries and species that fall under the Panel's jurisdiction. They also took this opportunity to discuss and agree to projects to be submitted for funding consideration under the Endowment Fund.

D. TRANSBOUNDARY PANEL

The Transboundary Panel met in bilateral sessions during the January and February 2004 meetings of the Commission. In addition there was a special meeting called of the Commissioners and the Transboundary Panel members during April in Seattle. At the January meeting, the Panel received reports from fishery managers on transboundary river fisheries in 2003 and updates on bilateral sockeye salmon enhancement activities in the Taku and Stikine rivers from the Enhancement Subcommittee of the Transboundary Technical Committee. During the two meetings position papers were exchanged on implementing new directed fisheries and developing abundance-based management regimes for transboundary river Chinook salmon. Two agreements were reached by the bilateral panel at the February meeting. One agreement allowed a small Stikine River subsistence fishery for sockeye salmon in the U.S. portions of the Stikine River, with harvests accounted for under the existing U.S. harvest allocation. The other agreement covered issues related to joint sockeye salmon enhancement programs at Tuya Lake in the Stikine River drainage and in Tatsamenie Lake in the Taku River drainage. The primary focus of the special April meeting was to reach agreement on developing directed Chinook salmon fisheries on the transboundary Stikine, Taku, and Alsek rivers. A small proposed U.S. Stikine River coho salmon subsistence fishery was also discussed at the April meeting. Despite intense negotiations, no agreements on these two issues were reached at the April meeting.

E. YUKON PANEL

During the 2003/04 business year (April 1 to March 31) the Yukon River Panel (YR Panel) met during the weeks of December 8, 2003 and March 4, 2004, with the benefit of prior meetings of the Joint Technical Committee (JTC), and involving the Co-Chairs ongoing direction to the Panel's Secretariat.

The primary purposes of the fall 2003 meeting were to: (1) conduct a post-season review of the 2003 fisheries; (2) make decisions on Restoration & Enhancement conceptual proposals to guide the subsequent submission of detailed R&E project proposals for 2004; and (3) conduct the other business of the Panel.

Results of the 2003 fishing season can be found in: *Yukon River Joint Technical Committee Report. 2003. Yukon River Salmon Season Review for 2003 and Technical Committee Report*, available from DFO Whitehorse or from the Panel's Secretariat.

The pre-season forecast of Upper Yukon Chinook salmon was 62,000. This outlook resulted in a conservation style management regime in Alaskan and Canadian fisheries. As the season progressed, it became apparent that the escapement of Chinook salmon was sufficient enough to allow for limited opportunities by all user groups. The preliminary spawning escapement for Upper Yukon Chinook salmon was achieved: 48,636 vs. a target of 28,000 fish. Preliminary estimated U.S. catch of upper Yukon, Canadian–origin Chinook salmon was 43,017 fish. The Canadian catch totalled 9,356 Chinook salmon. Canadian harvest share as specified in the Yukon River Salmon Agreement (YRSA) is 20-26% of the TAC for Upper Yukon Chinook salmon. The inferred U.S. share is 74-80% of the TAC.

Spawning escapement for Upper Yukon chum salmon (131,618 fish) exceeded the minimum escapement target of 65,000 fish. Conservation management was again imposed in both commercial and subsistence fisheries in Alaska and in Canadian commercial fisheries because of conservation concerns. As the run progressed, and in season estimates were generated, those conservation measures were relaxed. The estimated U.S. catch of Canadian-origin Upper Yukon chum salmon was between 12,299 and 20,498 fish. The Canadian catch was 10,463 fish. Canadian harvest share as specified in the YRSA is 29-35% of the TAC for Upper Yukon chum salmon. The inferred U.S. share is 65-71% of the TAC.

Through major cutbacks in Canadian and U.S. fisheries targeting Porcupine River stocks, the spawning escapement through the Fishing Branch weir of 29,519 chum salmon nearly doubled the minimum interim escapement target of 15,000 fish. This escapement remains below the Agreement target of 50,000 to 120,000 chum salmon. No harvest shares for this stock were identified in the YRSA.

Restoration and Enhancement Program

To streamline the call process for the R&E Program applications, the YR Panel has implemented a process to solicit one page R&E conceptual proposals, the decisions guide the solicitation of detailed project proposals, within pre-determined overall and individual project budget targets. In addition to the objectives and priorities provided for the R&E Program in the Agreement, the YR Panel approved a "R&E Budget Priorities Framework" to guide our call for, and consideration of R&E projects proposals. In addition to focusing our management of the R&E program, this approach enables our technical advisors to work with project applicants to develop the most effective project proposals – which is particularly important given the community based nature of most of our R&E projects.

The Agreement provides $1.2 million (US$) for the YR Panel's R&E Program, of which we assign the bulk directly to projects, with 5%-10% assigned for all related program management costs, and normally a small percentage set aside as a reserve. The latter has been aided by a carefully husbanded carry-over of funds from previous years.

The 2004 R&E conceptual proposals were initially reviewed by the Canadian Section of the Panel which, as stated in the Agreement, has the authority to allocate approximately half of the available R&E funds; with adjustments made to achieve the overall R & E program target and decisions of the YR Panel as a whole. This review involved eighty-three (17AK, 66YT) conceptual proposals amounting to approximately $3.25 million (US$), with the YR Panel approving 49 conceptual proposals amounting to approximately $1.38million (US$) to be advanced as detailed project proposals for further consideration by the YR Panel in March.

The YR Panel directed the basin wide radio telemetry program to be completed in 2004, enabling re-allocation of these relatively large project funds to new restoration and enhancement priorities, including to the Porcupine River system as a new priority.

Other Business

The YR Panel reviewed and discussed JTC reports on: the basin-wide radio telemetry projects; ongoing documentation the presence of, and research into *Ichthyophonus* in the Yukon River drainage; marine by-catch & monitoring/enforcement; and integrated research planning for the basin.

In addition to these matters, the YR Panel tasked the JTC to: (1) develop a more comprehensive report/data storage and retrieval system; (2) develop an RFP format for those projects for which the YR Panel will seek specific proposals (in combination with the ongoing open call process); (3) determine appropriate genetic stock identification research methods; (4) review appropriate sonar technology and determine the merit of that technology being used at the U.S./Canada border; and (5) review the literature to determine the possible effect of harvest by net sizes on the evolution of the genetics (size) of chinook stocks.

The YR Panel's communications committee outlined its progress on priorities re-affirmed by the Panel, including: (1) educational exchange throughout the Yukon River; (2) video on the Yukon River communities, people and fisheries with an outline of the role and progress of the YR Panel; (3) booklet for the use of YR Panel members and staff that includes the YR Panel bylaws, list of Panel members, alternates and description of Panel processes, including the role of the JTC; (4) a handbook directed to community and school use throughout the drainage describing the Yukon River fisheries and the international management arrangements; creation of a web page for the YR Panel; and (5) a YR Panel Calendar depicting relevant events and the communities along the River, including traditional ecological knowledge statements, also noting Panel meeting and other important dates.

The report by the Panel's auditor of the 2002/03 accounts was reviewed by the Panel with the result of the Panel's previous fiscal year accounts being approved.

The March 2004 meeting of the YR Panel focused primary on: (1) a review of the chinook and chum run outlooks for 2004, leading to the determination of Canadian border and spawning ground escapement targets for the upcoming season; (2) review of progress on JTC assignments; approval of R&E projects for 2004; and (3) other business, primarily involving decisions pertaining to YR Panel administration.

Run Outlooks and Escapement Targets:

Run outlooks were prepared by the Yukon River Joint Technical Committee and are presented in their March 2004 report: *Yukon River Salmon Run Outlooks For 2004 And Recommended Escapement Goals, And Selected Project Updates*. This report is available from the sources noted above for the 2003 season review.

The 2004 run size for Canadian-origin Upper Yukon Chinook salmon is anticipated to be average to slightly below average. This assumes a normal return of 6-year-old fish and a weaker return of 5-year-olds.

The run size for Canadian-origin Upper Yukon chum salmon is anticipated to be average but given the continued conservation concern, the stock will be managed at the 'conservation' level until in season estimates are available.

The 2004 run outlook for Fishing Branch chum salmon is very poor, and is a serious conservation concern. The run forecast of chum salmon returning to the Fishing Branch River is expected to be between 7,600 and 17,600, the upper end is only 35% of the minimum escapement goal of 50,000.

Recommended escapement targets determined by the YR Panel for 2004 were:

- Chinook – the target is 28,000 with a 'slide' up to 38,000 as run abundance increases.
- Mainstem Yukon River Fall Chum – as per the 3 cycle rebuild target identified in the JTC report, accepting the 65,000 target, while noting the long term target is 80,000, and encouraging a conservative management regime in 2004 to protect the Porcupine River stocks.
- Porcupine River Fall Chum – minimum interim escapement target is 13,000 fish the overall harvest rate on the Fishing Branch is not to exceed 26% of the run, if the run returns as expected (as identified in the second option advanced by the JTC). While noting the context of the above decision pertaining to the management regime for the Yukon River mainstem, and:
    - positive action was encouraged in the management of the 2004 fisheries to reduce interception of this stock;
    - this fishery be monitored and quantified in the Fort Yukon area with the objective of determining the specific nature of that fishery (mainstem above and below Fort Yukon, and on the Porcupine River): and,
    - the JTC develop stock rebuilding/escapement goal options for the Porcupine River fall chum stock for the YR Panel's consideration.

JTC Assignments – Review and Decisions

The YR Panel reviewed the progress and provided the following direction regarding JTC assignments:

- data storage and retrieval systems to be researched further, meanwhile, R&E project reports will be placed on the YR Panel website;
- the RFP format will be developed further, categorization of R&E project as per the Budget Priorities document will continue to aid decision making;
- research into the most appropriate method of stock genetics identification to continue;
- sonar technology to determine border escapement will continue through a related JTC committee, including use of the R&E Fund as appropriate; and,
- further research will continue (including analysis of the past 20 years of age and size data) into possible effects on Chinook stock harvest by net size.

Project protocols were reviewed and discussed toward achieving standardized techniques, scope of data collection to be included for standard field inventories, and reporting.

Restoration & Enhancement Program

The YR Panel reviewed 45 detailed R&E project proposals (reduced from the original list of 83CPs) seeking $1.2million (US$). with a final decision to fund 38 of the projects totaling $1.1 million (US$).

Further to the "R&E Budget Priorities Framework", the YR Panel identified 7 priorities to guide the 2005 R&E call for proposals,

Other Business

The Communications Committee provided an update on the projects outlined during the fall 2003 meeting, with YR Panel making related decisions.

The YR Panel reviewed and approved an overall 2003/04 budget of approximately $1.4millionUS/$1.8millionCdn, with a projected retained surplus of approximately $110,000US/$142,000Cdn.

Review of 2003 Fisheries and Treaty-Related Performance

PART IV
REVIEW OF 2003 FISHERIES AND TREATY-RELATED PERFORMANCE

The following review has been drawn from a number of reports prepared by Commission staff, joint technical committees, and domestic agencies for presentation to the Commission. Source documents are referenced for each part of this review. All figures are preliminary and will be updated in future reports as more complete tabulations become available.

A. FRASER RIVER SOCKEYE SALMON

In 2003, the Fraser River Panel managed fisheries in the Panel Area that targeted Fraser River sockeye and pink salmon, under the terms of Annex IV of the Pacific Salmon Treaty that was revised on June 30, 1999. Chapter 4 of the Agreement provides catch sharing arrangements for Fraser River sockeye and pink salmon for the period 1999-2010. Under the terms of the Agreement, the 2003 United States sockeye catch in Panel Areas (Washington) was not to exceed 16.5% of the Total Allowable Catch (TAC) of Fraser River sockeye salmon minus a payback of up to 9,000 fish due to a catch overage carried forward from 2002. For Fraser River pink salmon, the United States share of the TAC was 25.7% plus up to 21,000 fish due to a catch underage in 2001. Panel Area fisheries in Canada were to be managed by the Fraser River Panel, while Canadian fisheries outside the Panel Area were to be managed by Canada in a manner that considered catches in United States fisheries.

Canada provided the Panel with run-size forecasts for Fraser River sockeye and pink salmon and guidelines for calculating spawning escapement targets at a meeting held from April 30 to May 1, 2003. The forecasts were at five probability levels: 25%, 50%, 75%, 80% and 90% probabilities that the run size would be exceeded. Canada identified conservation concerns for Early Stuart, Early Summer-run and Late-run sockeye run timing groups. Summer-run sockeye were expected to provide the largest share of the catch. Late-run sockeye conservation concerns assumed that the early upstream migration and associated high mortality that has occurred every year since 1996 would continue to occur in 2003.

The Panel used the Fishery Simulation Model to examine potential management options for Fraser River sockeye salmon at the 50%, and 75% probability level forecasts, which were 5,502,000 and 3,141,000 fish, respectively. The Fraser River pink salmon run size at the 50% probability level forecast was 17,273,000 fish. The Fraser sockeye spawning escapement targets for the four run-timing groups at the 50% probability level forecast were: 75,000 Early Stuart; 124,000 Early Summer-run; 1,281,000–Summer-run sockeye; the Late-run escapement goal was to be announced at a later date. The escapement target for Fraser River pink salmon at the 50% probability level forecast was 6,046,000 fish. The projected TAC at the 50% and 75% probability level forecast run sizes for sockeye were 2,345,000 and 829,000 fish, respectively, and for Fraser River pink salmon, 11,207,000 fish at the 50% probability level forecast.

Domestic allocation targets for Fraser sockeye in Washington were as follows: Treaty Indian fishers were allocated 67.7% of the United States share minus 4,000 fish of the 9,000 fish payback, while Non-Indian fishers were allocated the remaining United States share minus 6,000 of the 9,000 fish payback. The allocation among Non-Indian fishers was 54% for purse seines, 41% for gillnets, and 5% for reefnets. Domestic allocation targets for Fraser River pink salmon in Washington were as follows: Treaty Indian and Non-Indian fishers were each allocated 50% of the United States share and of the payback of 21,000 pink salmon for catch shortfalls in 2001.

Domestic allocation targets for Fraser sockeye in Canadian commercial fisheries were as follows: 41% for Area B purse seines, 14.5% for Area D gillnets, 30% for Area E gillnets, and 14.5% for Area H trollers. Domestic commercial allocation targets for Fraser River pink salmon were 60% for Area B purse seines, 4% for Area D gillnets, 1% for Area E gillnets, 22% for Area G trollers, and 13% for Area H trollers.

During pre-season planning, a forecast of the diversion rate of Fraser sockeye through Johnstone Strait, was not available, so a diversion rate of 50% was assumed (on July 9, DFO provided a forecast of the diversion rate of Fraser sockeye of 64%. The forecasts of run timing (50% cumulative migration through Canadian Area 20 – Juan de Fuca Strait) were July 6 for Early Stuart sockeye, August 13 for Chilko sockeye, and August 31 for Fraser River pink salmon.

Simulation modeling of harvest strategies for Summer-run sockeye suggested that the majority of the TAC of Summer-run stocks could be harvested at the 50% probability level forecast.

On June 5, 2003, the Panel agreed on guidelines to address Late-run sockeye conservation concerns: (1) if the in-river mortality rate on Late-run sockeye was estimated to exceed 47% or if their run size was estimated to be lower than their 50% probability level forecast, the exploitation rate would be reduced from 25% down to a range between 15% and 25%, based on Canada's escapement target; and (2) if the in-river mortality rate on Late-run sockeye was estimated to be lower than 47% and/or if their run size was estimated to be higher than their 50% probability level forecast, consideration would be given to increasing the exploitation rate to levels exceeding 25%, consistent with meeting Canada's Late-run escapement target.

The Panel's management plan focussed on the conservation of Early Stuart, Early Summer-run and Late-run sockeye stocks and on the harvest of Summer-run sockeye. Fishery restrictions were anticipated early in the season to protect Early Stuart and Early Summer-run sockeye and late in the season to protect Late-run stocks.

Between July 8 and September 26, the Panel conferred 26 times by telephone conference to discuss run status and enact in-season orders to regulate fisheries. PSC staff provided periodic updates on catches, escapements and racial composition and recommended adoption of in-season run-size estimates. The Panel adopted regulations for Panel Area fisheries consistent with the pre-season planning constraints.

Catches of Fraser River sockeye salmon in all fisheries totalled 2,268,000 fish. The Canadian catch was 1,917,000 sockeye, United States fishers harvested 244,000 fish, and test fishery catches totalled 107,000 sockeye. Canadian catches included 1,036,000 fish in commercial fisheries, 804,000 fish in First Nations' fisheries, 66,000 fish in recreational fisheries, 1,000 fish in charter fisheries, and 10,000 Weaver Creek sockeye in an ESSR (excess salmon to spawning requirements) fishery. Within the United States catch, all 244,000 fish were harvested in Washington waters. Commercial fishery catches in both countries summed to 1,280,000 fish.

Catches of Fraser River pink salmon totalled 2,062,000 fish: 1,208,000 fish in Canada, 811,000 fish in United States, and 43,000 fish in Panel-approved test fisheries. Included in the Canadian total were 833,000 fish in commercial, 293,000 fish in First Nations', and 82,000 fish in recreational fisheries. In the United States fishery 772,000 pink salmon were harvested in commercial and 39,000 fish in recreational fisheries.

The Stock Monitoring program provided in-season estimates of abundance, migration timing and diversion rate of Fraser River sockeye and pink salmon throughout the fishing season. The peak migration timing through to Area 20 was July 4 for Early Stuart sockeye (one day later than average), July 30 for Early Summer-run sockeye (nine days later than average on this cycle), August 7 for Summer-run sockeye (four days later than average on this cycle), August 15 for Late-run sockeye, excluding Birkenhead sockeye, which is three days earlier than average, and August 25 for Fraser River pink salmon (two days earlier than average). The overall diversion rate of Fraser sockeye through Johnstone Strait was estimated to be 74% while approximately 48% of Fraser pink salmon migrated via Johnstone Strait.

The Racial Identification program provided estimates of stock composition for sockeye catches in commercial, Aboriginal, and test fisheries. Scale and DNA data were employed in this process. Stock composition data were used to estimate the run size and gross escapement of individual stock groups. DNA estimates of stock composition confirmed the presence of Late-run sockeye at critical times during the season. Genetic stock identification (GSI) techniques were used to estimate the contribution of Fraser River pink salmon in commercial and test fisheries.

The adult return of Early Stuart sockeye (30,000 fish) was 66% lower than the 50 % probability level forecast; Early Summer-run abundance (542,000 fish) was 32% higher than the 50% probability level forecast; Summer-run sockeye (2,782,000 fish) were 17% lower than the 50% probability level forecast; and Late-run sockeye (1,466,000 fish) were 11% lower than the 50% probability level forecast of abundance. Overall, the return (4,820,000 adults and 8,000 jacks) was 12% lower than the 50% probability level forecast for adult sockeye. Among the Summer-run stocks, Chilko sockeye dominated the returns, followed by Quesnel, and Late Stuart /Stellako sockeye. The largest Late-run return was from Late Shuswap/Portage sockeye, followed by Birkenhead and Weaver/Harrison/Cultus sockeye. The run size estimate for Fraser River pink salmon is highly uncertain, because DFO did not conduct an escapement enumeration program in 2003 (and most of the run was comprised of escapement rather than catch, which was enumerated). The final in-season run-size estimate of Fraser River pink salmon was 26,000,000 fish, which is considerably higher than the 50% probability level forecast and the largest run since at least 1959.

The Late-run sockeye exploitation rate limit was exceeded in 2003. The pre-season projection of the Late-run 50% upstream migration date at Mission was September 12, which, under the terms of the Panel's pre-season Late-run conservation guidelines generated a Late-run exploitation rate limit of 25%. The first in-season estimate of the 50% upstream migration date (not available until August 22 when commercial fisheries had terminated) resulted in a much earlier upstream migration estimate (August 27). This generated a decrease in the Late-run exploitation rate limit from 25% to 15%. The final estimate of the Late-run exploitation rate for all commercial fisheries was 18.4%, while the total from all fisheries combined was 35.0%.

Near-final estimates of spawning escapements to streams in the Fraser River watershed totaled 1,978,000 adult sockeye. This escapement was 8% larger than the brood year (1999) escapement of 1,830,000 adults. Spawning escapements for Early Stuart sockeye (13,000 fish) were approximately half of the brood year level; Early Summer-run escapements (193,000 fish) were 87% higher than in the brood year; Summer-run escapements (1,003,000 fish) were 22% lower than the brood year; and Late-run escapement (768,000 fish) was 82% higher than the brood year. As noted above, DFO did not conduct an escapement enumeration program on Fraser River pink salmon in 2003, however, with a run size of 26,000,000 fish and catch of 2,000,000 fish, the escapement (by subtraction of catch from total run) of approximately 24,000,000 fish was the highest since at least 1959.

The success of spawning by female sockeye in the entire watershed averaged 98%, which exceeded the brood year spawning success rate (90 %).

Adjusted gross escapement targets (target + management adjustment) for sockeye salmon were achieved for Early Stuart sockeye, exceeded for Summer-run stocks (581,000 fish over), and under for Early Summer-run (69,000 under) and Late-run stocks (105,000 under), based on lower river estimates (in-season Mission escapement plus First Nations' catch below Mission). The total in-season gross escapement estimate exceeded the adjusted target by 407,000 sockeye.

Upriver estimates of gross escapement (in-river First Nations and recreational catch plus spawning escapement) totaled 220,000 sockeye less than the unadjusted gross escapement target for Early Stuart (16,000 under), Early Summer (47,000 under) and Summer runs (157,000 under). The achievement of the gross escapement target for Late-runs cannot be calculated, because the escapement target component in the adjusted gross escapement target (85% of the run = target + management adjustment) for True Late-run sockeye was not specifically identified.

On February 17, 2005, the Commission provided the Panel with guidance that the Panel implemented in a revised Chapter 4, Annex IV, of the Pacific Salmon Treaty. The revised Annex established new methods for making Panel decisions, calculating the TAC, and calculating paybacks in future years due to catch overages and underages, beginning in 2005. The Panel also agreed that for 2002, 2003 and 2004 an in-season method for calculating the TAC and assessing the achievement of international allocations would be shown in the annual report for each year, although there were to be no paybacks generated for these years. The new calculation method, based on final in-season estimates of run size, spawning escapement targets and management adjustments, resulted in United States underages of 118,000 sockeye and 3,876,000 Fraser pinks, and Canadian underages of 380,000 sockeye and 12,262,000 pinks.

In relation to domestic allocation between fishers in the United States, Treaty Indian fishers caught 8,000 fish less than their allocation and Non-Indian fishers harvested 8,000 fish more than their allocation. Among Non-Indian fishers, purse seines and reefnets exceeded their allocations by 2,000 and 4,000 fish, respectively, while gillnets were 6,000 fish short. With regard to pink salmon, Treaty Indian fishers were 65,000 fish under and Non-Indian fishers were 65,000 fish over their allocations.

With respect to Canadian domestic allocation goals, within the Canadian commercial catch of 1,036,000 Fraser sockeye, Area B purse seines were 61,000 fish over, Area D gillnets were 17,000 fish over, Area E gillnets were 52,000 fish under, and Area H trollers were 26,000 fish under their allocations. For Fraser River pink salmon, Area B purse seines were 222,000 fish over, Area D gillnets were 17,000 fish under, Area E gillnets were 10,000 fish over, Area G trollers were 184,000 fish under, and Area H trollers were 31,000 fish under their respective allocations.

The restrained fisheries in 2003 resulted in moderate by-catches of non-Fraser sockeye and pink salmon and other salmon species in commercial net fisheries. Catches of non-Fraser pink salmon totaled 86,000 fish (mostly in Washington waters), 11,500 chinook salmon (divided equally between Canadian and U.S. waters), and 3,600 coho salmon (in Washington waters). Catches of non-Fraser sockeye and of chum and steelhead were small.

By Panel agreement, any remaining paybacks after the 2003 season were deemed to have been cancelled because of the large unharvested shares experienced by both countries in

2003. Consequently, there were no paybacks to carry forward to 2004 for either Fraser sockeye or pink salmon.

B. 2003 POST-SEASON REPORT FOR CANADIAN TREATY LIMIT FISHERIES

Fisheries in 2003 were conducted according to Annex IV arrangements under the Pacific Salmon Treaty that was agreed to between Canada and the United States in June, 1999. The conservation-based approach commits the two Parties to abundance-based management for all stocks covered by the Treaty.

Catches reported below provide the best information available to date, and may change when all catch information for 2003 has been received. The catches are based on in-season estimates (hailed statistics), on-the-grounds counts by Fisheries and Oceans Canada management staff and independent observers, logbooks, dockside tallies, and landing slips (aboriginal fisheries), fish slip data (commercial troll and net), and creel surveys, logbooks and observers (sport and commercial).

Annex fisheries are reported in the order of the Chapters of Annex IV. Comments begin with expectations and management objectives, followed by catch results by species, and where available and appropriate, escapements. The expectations, management objectives, catches and escapements are only for those stocks and fisheries covered by the Pacific Salmon Treaty (PST); domestic catch allocations have been excluded. A table attached at the end of this report summarizes 1993-2003 catches in Canadian fisheries that have at some time been under limits imposed by the Pacific Salmon Treaty.

Transboundary Rivers

Stikine River

Canada developed a fishing plan for the Stikine River based on the catch sharing arrangements outlined in Annex IV, Chapter 1, Paragraph 3 of the PST. Accordingly, the 2003 management plan was designed to meet agreed escapement targets and the following harvest objectives: to harvest 50% of the total allowable catch (TAC) of Stikine River sockeye salmon in existing fisheries; to allow additional harvesting opportunities for enhanced stocks in terminal areas to target sockeye salmon that were surplus to spawning requirements; to harvest 4,000 coho salmon in a directed coho salmon fishery; and, to allow chinook salmon to be taken in the commercial fishery only as an incidental catch in the directed fishery for sockeye salmon. The 2003 season opened on 22 June, statistical week (SW) 26, and ended in SW34 (23 August). To address pre-season conservation concerns for Tahltan Lake sockeye salmon, commercial gear was limited to one net and the lower Stikine River commercial fishing area was reduced, as it had been in 2001-2002.

Sockeye salmon

The pre-season forecast of returning Stikine sockeye salmon, as provided by the Canada/US Technical Committee for the Transboundary Rivers (TCTR), was 183,600 fish, including 95,600 Tahltan Lake origin sockeye salmon (54,700 wild and 40,900 enhanced), 19,600 enhanced Tuya Lake origin sockeye, and 68,400 non-Tahltan wild sockeye salmon. For comparison, the previous 10-year (1993-2002) average terminal[1] run size was approximately 184,700 fish.

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[1] terminal run excludes U.S. interceptions that occur outside of the District 108 and 106 gillnet fisheries.

Preliminary catches from the combined Canadian commercial and aboriginal gillnet fisheries in the Stikine River in 2003 included: 1,396 large[2] chinook, 1,052 jack chinook, 58,784 sockeye, 190 coho, 850 pink and 112 chum salmon. All steelhead were released in 2003 as required under regulations. First Nation catches accounted for approximately 11% of the total sockeye harvest, 49% of the catch of large chinook and 35% of the catch of jack chinook salmon. In addition to these catches, 7,031 sockeye salmon were taken in a terminal fishery in the lower Tuya River. Total catches of chinook jacks, sockeye and pink salmon were above average: the catch of jack chinook salmon was approximately two times the 1993-2002 average of 522 fish; the sockeye catch was 34% above the average of 43,700 fish; while the catch of pink salmon was ten times the 1993-2002 average of 81 fish. The preliminary estimate of the total contribution of sockeye salmon from the Canada/U.S. joint enhancement program to the combined Canadian aboriginal and commercial fisheries is 18,500 fish, representing 31.5% of the catch. The coho and chum salmon catches of 190 and 112 fish respectively were 85% and 27 % below their respective ten year averages.

A total of 53,933 sockeye salmon was counted through the Tahltan Lake weir in 2003, 105% above the 1993-2002 average of 26,906 fish. The 2003 count was the third highest on record (record count 67,326 in 1998) and was approximately 47% above the upper end of the escapement goal range of 18,000 to 30,000 fish. An estimated 23,300 fish at the weir (43.1%) originated from the fry-planting program, close to the 41.2% contribution of smolts observed in 2000, the principal cycle year contributing to the 2003 return. The estimate of planted fish in 2003 was based on the proportion of thermally marked otoliths taken from 400 sockeye salmon sampled at the weir for stock composition analysis. In addition to these fish, a total of 3,945 sockeye salmon was collected for broodstock, leaving a spawning escapement of 49,588 sockeye salmon in Tahltan Lake.

The spawning escapements for the non-Tahltan and the Tuya stock groups are calculated using stock ID, test fishery and in-river catch data. The preliminary escapement estimates are 66,595 non-Tahltan and 13,992 Tuya sockeye salmon. The existence of significant enhanced Tuya escapement continues to be a serious concern because of straying[3] and potential associated impacts to wild spawning stocks. The non-Tahltan spawning escapement estimate is approximately 66% above the upper end of the escapement goal range of 20,000 to 40,000 fish and nearly double the previous ten-year average. However, an above average escapement was not confirmed by aerial survey results of non-Tahltan index spawning areas; the aerial count of 604 fish was 59% below the 1993-02 average of 1,026 sockeye salmon. Reasons for the discrepancy in these results are unknown. Survey conditions were rated as fair and there was no indication that the poor counts were attributed to the timing of the surveys (although surveys were flown only once).

Based on the in-river run reconstruction of the Tahltan Lake run expanded by run timing and stock ID data in the lower river and estimated harvests of Stikine sockeye in US terminal gillnet fisheries, the preliminary post-season estimate of the terminal sockeye run size is approximately 258,500 fish. This estimate includes 104,400 Tahltan Lake sockeye, 41,500 Tuya Lake sockeye, and 112,600 sockeye of the non-Tahltan stock aggregate. A Stikine run size of this magnitude is 40% above the 1993-2002 average terminal run size of 184,700 sockeye salmon. The preliminary post-season estimate of the Canadian TAC for 2003 is approximately 95,800 sockeye, well above the actual catch of 58,800 sockeye.

In-season management was influenced significantly by run size projections derived from the Stikine Management Model (SMM), which was updated and refined by the TCTR prior to the season. The model is based on the historical relationship between cumulative catch per unit effort (CPUE) and run size and provides three sets[4] of independently generated projections: one set based on US District 106 CPUE; another based on Canadian in-river commercial CPUE; and the third, based on Canadian test fishery CPUE. Since the model predictions derived from the test fishery data in 2000- 2002 were the closest to respective post season estimates of run size, the TCTR gave priority to the run projections derived from test fishery data for management purposes in 2003

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[2] chinook >659 mm mid-eye fork length typically having an ocean age of more than 2 years.

[3] Straying of Tuya sockeye has been confirmed using radio telemetry and sampling for thermal marks.

The in-season projections ranged from 191,200 fish in SW28 (06-12 July) to 283,800 fish in SW31 (27 July to 02 August). The final SMM projection indicated a run size of approximately 272,100 sockeye and a TAC for Canada of approximately 104,600 sockeye. According to this forecast, the Canadian catch was well below the treaty entitlement.

The sockeye mark-recapture programme initiated in 2000 continued in 2003. The primary objectives of this programme are to provide an estimate of abundance independent from the SMM and to examine the feasibility of developing an alternate abundance-based management tool for Stikine sockeye if required. The preliminary mark-recapture estimate of the total in-river run size is approximately 216,000 sockeye salmon. This estimate is slightly more than the in-river run estimate of 204,000 sockeye based on the traditional method of reconstructing the in-river Tahltan run then expanding it using stock ID and run timing data. Further analyses are required to: a) determine which estimate should be used as the final post season estimate; and b) to compare the performance of the mark-recapture projections vs. those of the SMM.

Coho salmon

Poor prices in concert with the relatively low coho salmon quota of 4,000 fish resulted in a catch of only 190 coho, 85% below the 1993-2002 average of 1,266 coho salmon. All of the coho were taken in the lower Stikine commercial fishery.

To assess the abundance of salmon in the lower Stikine River, a coho salmon mark-recapture program was conducted again in 2003. The preliminary estimate of the number of fish reaching the border is approximately 106,900 coho salmon. Subtracting the in-river catches of 190 coho in the commercial fishery, and 1,699 coho in the test fishery, leaves a potential total spawning escapement of approximately 104,991 coho. This estimate is well above the interim escapement goal range of 30,000 to 50,000 coho salmon. The cumulative weekly CPUE observed in the coho test fishery also indicated an above average run. Due to high water events in combination with inclement weather conditions, the annual coho aerial surveys have yet to be conducted (19 November).

Chinook salmon

The total gillnet catch of chinook salmon in the combined aboriginal and commercial fisheries included 1,396 large chinook and 1,052 jacks compared to 1993-2002 averages of 2,320 large chinook and 522 jacks. The count of 6,492 large chinook salmon through the Little Tahltan River weir was close to the 1993-2002 average of 6,477 fish and was 22% above the upper end of the escapement goal range of 2,700 to 5,300 chinook salmon. The weir count of 334 jack chinook salmon was approximately two times the previous 10-year average of 163 fish. Results from the Stikine River chinook mark-recapture program are not yet available; however, based on the 1996-2002 average contribution of Little Tahltan chinook to the total in-river escapement, i.e. 21.8%, a preliminary estimate of the total Stikine River spawning escapement is 29,800 large fish. This estimate is slightly above the upper end of the system-wide escapement goal range of 14,000 to 28,000 Stikine chinook salmon established by the TCTR.

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[4] Each set of projections includes predictions of the terminal run size of all Stikine sockeye, the Tahltan stock, the Tuya stock and the mainstem stock conglomerate.

Joint sockeye enhancement

Joint Canada/U.S. enhancement activities continued with approximately 5.61 million sockeye eggs collected at Tahltan Lake in the fall of 2003 and flown to the Port Snettisham Hatchery in Alaska for incubation and thermal marking. The egg collection target of 6.0 million eggs was not achieved primarily due to a change in field crew in mid-season as a result of two deaths in the local community. This, in concert with a restriction on taking broodstock from the spawning grounds after 25 September, which was enacted to allow time for undisturbed spawning of wild stocks, resulted in the egg take goal not being achieved.

Approximately 2.62 million fry were out-planted into Tahltan Lake in early to late May 2003. The fry originated from the 2002 egg-take at Tahltan Lake and were mass-marked in the hatchery with thermally induced otolith marks. For the first time in four consecutive years, sockeye fry originating from the Tahltan Lake egg take were released into Tuya Lake. A total of 1.12 million fry were released on 12 June.

Approximately 2.0 million sockeye salmon smolts were enumerated emigrating from Tahltan Lake in 2003, 60% above the 1993-2002 average smolt count of approximately 1.2 million smolts. Approximately 50% of the emigration was of hatchery origin.

To address problems with fish capture in the lower Tuya River, plans had been previously developed to install a fishway/trapping apparatus and a flow diversion structure. The fishway, which was to include a fish trap, was intended to increase the terminal harvest capability for enhanced Tuya sockeye salmon while still allowing indigenous species to bypass the capture site. Because of concerns about inherent dangers of blasting at the fishing site (situated in a steep canyon with active slopes), in tandem with cost factors associated with the blasting, purchase and installation of a steep-pass fish ladder, in August 2002 it was decided to defer the fishway component of the project. Plans are still being considered to improve fish harvesting capability, either through the use of a fishway as originally conceived, or through other fishing techniques.

Attempts were made in May 2003, however, to install a diversion weir to protect the fishing site from high water events. Unseasonably high water in the spring resulted in postponement of this project until the spring of 2004.

In July, an engineering study was conducted to assess the safety of the fishing site and the potential effects of blasting on slope stability. It was concluded that the site is relatively safe during the fishing season (July and August) except during periods of heavy rain when the crew should cease fishing. It was also concluded that controlled blasting at the fishing site would not likely result in a rock slides and should not pose a threat to fishing and/or construction crews if precautions are taken.

Taku River

As with the Stikine River, the fishing plan developed by Canada for the Taku River was based on the arrangements in Annex IV, Chapter 1, Paragraph 3 of the Pacific Salmon Treaty. Accordingly, the plan addressed conservation requirements and contained the following harvest objectives: to harvest 18% of the TAC of wild Taku River sockeye salmon plus up to 20% of the projected sockeye escapement in excess of 100,000 fish; to attain a 50% share of the catch of enhanced Taku River sockeye; to harvest 3,000 to 10,000 coho salmon, depending on in-river run size projections, in a directed coho fishery; and to allow commercial chinook catches to be taken only incidentally in the directed sockeye fishery. The plan also contained mid-season fishery restrictions to address conservation concerns associated with Tatsamenie sockeye. The 2003 season opened on 15 June, SW25, and ended in SW37 (week ending Sept 13).

Sockeye salmon

The Canadian pre-season run outlook was for a sockeye run of 304,000 sockeye, approximately 17% above the previous 10-year average run size of 259,000 sockeye.

The 2003 Canadian sockeye catch totaled 32,997 sockeye, 32,730 of which were caught in the commercial fishery and the remainder in the aboriginal fishery. The commercial catch was slightly above the 1993-2002 average of 30,673 sockeye. Enhanced sockeye returns were expected to be low in 2003. The preliminary estimate of the contribution of sockeye salmon from the Canada/U.S. enhancement program to Canadian fisheries is only 263 fish. The estimated total spawning escapement of 163,366 sockeye salmon in the Canadian section of the Taku River, derived from post-season analyses of Canada/U.S. mark-recapture data, is 114% above the mid-point of the interim escapement goal range of 71,000 to 80,000 fish and is 63% above the 1993-2002 average of 98,280 sockeye. Based on weir counts, escapements to the Little Trapper, Tatsamenie and Kuthai lake systems were 31,227 (record high), 4,515 sockeye and 7,769, respectively. The Little Trapper escapement estimate was 173% above the 1993-2002 average, whereas, the Tatsamenie count was 43% below average. The Kuthai Lake count was 64% above the 1993-2002 average.

In-season projections of the total sockeye run size, TAC, and total escapement were made frequently throughout the season. The estimates were based on the joint Canada/U.S. mark-recapture program, the estimated interception of Taku River sockeye in U.S. fisheries, the catch in the Canadian in-river fishery, and historical run timing information. The final in-season run projection indicated a total run of approximately 338,500 sockeye and a total spawning escapement of approximately 157,900 sockeye. The preliminary post season estimate of total (terminal) run size is approximately 338,300 wild sockeye with a TAC of 258,300 to 267,300 sockeye. Preliminary analysis indicates that the Canadian sockeye catch represented 12.2-12.7% of the TAC. The preliminary estimate of the total Canadian and US combined harvest of enhanced Taku sockeye salmon is approximately 1,061 fish of which Canada harvested 25%.

Coho salmon

The commercial catch of 3,168 coho salmon was approximately 46% below the 1993-2002 average catch of 5,837 coho salmon. Of the total coho catch, approximately 600 fish were taken in the directed coho fishery, i.e. after week 33. Preliminary mark-recapture data indicated a spawning escapement of 168,000 coho salmon in 2003. This estimate is close to twice the previous 10-year average of 86,000 fish, and several times the interim escapement goal of 27,500 – 35,000 fish. The preliminary estimate of the total in-river run into the Canadian section of the drainage was 171,600 coho. The spawning escapement and in-river run estimates have yet to be expanded for the portion of the run not covered by the mark-recapture study. According to the PST harvest arrangements for Taku coho salmon, Canadian fishers were entitled to harvest up to 10,000 coho salmon at a run size of this magnitude. However, poor prices and market conditions resulted in very limited commercial fishing effort. A total of 416 coho salmon was harvested in the aboriginal fishery.

Chinook salmon

The commercial catch of 1,894 large chinook was 6% below the 1993-2002 average of 1,793 fish; whereas, the catch of 547 chinook jacks was 249% above the 1993-2002 average of 191 fish. Chinook escapement counts were average to below average in the six Taku River aerial index areas surveyed. The combined index count of 5,917 fish was 38% below the previous 10-year average of 9,546 chinook. Preliminary estimates derived from the joint Canada/US chinook mark-recapture program indicate a total spawning escapement of approximately 38,918 large chinook salmon, which is well within the escapement goal range of 30,000 to 55,000 large chinook salmon.

Joint sockeye enhancement

Joint Canada/US enhancement activities at Tatsamenie Lake continued in 2003 and an estimated 2,630,000 viable eggs were delivered to the Snettisham Hatchery in Alaska for incubation and thermal marking. The 2003 egg collection did not meet the target of 5.0 million eggs due primarily to the below average escapement to Tatsamenie Lake. The experimental passive flow incubators within Tatsamenie Lake were re-stocked with 195,500 eggs. The in-lake incubation project, which was initiated on a small scale in 1998, is part of ongoing investigations into techniques that may increase fry-to-smolt survivals of the outplanted enhanced fry which have been well below expectations. Design alterations to protect the incubator from ice flow damage were made in 2003.

In May 2003, approximately 1,353,000 fry were transported from Snettisham Hatchery to Tatsamenie Lake in three shipments. The eyed egg-to-fry survival was approximately 82% and included the loss of 484,000 eggs in the hatchery as a result of an outbreak of IHNV. Another group of approximately 442,000 fry, held in an experimental feeding study at Tatsamenie Lake, was also destroyed due to IHNV infection. Therefore, the total fry released into Tatsamenie Lake was approximately 911,000 fry.

The 2003 Tatsamenie Lake sockeye smolt out-migration was estimated to be approximately 539,500 fish. Based on sampling of out-migrating smolts, it appeared the survival of unfed fry released in late May 2002 was greater than twice the survival of fed fry released into the lake in mid June 2002.

Alsek River

Although catch sharing of Alsek salmon stocks between Canada and the U.S. has not been specified, Annex IV of the PST does call for a co-operative development of abundance-based management regimes for Alsek chinook, sockeye and coho stocks. Interim escapement goal ranges for Alsek sockeye and coho salmon were initially set by the TCTR at 33,000 to 58,000 sockeye salmon, and 5,400 to 25,000 coho salmon. However, prior to 2000, stock assessment projects to determine system-wide escapements had not been developed except for some limited work on chinook salmon. Instead of managing to system-wide goals, which for the most part have been unverifiable, the TCTR has established index goals for the Klukshu River stocks. Historically, the principal escapement-monitoring tool for chinook, sockeye and coho salmon stocks in the Alsek drainage has been the Klukshu River weir, operated by Fisheries and Oceans Canada and the Champagne-Aishihik First Nation. The Klukshu River is a tributary to the Tatshenshini River, which is a major salmon producing river system of the Alsek drainage.

Based on joint stock-recruitment analyses conducted on Klukshu chinook and sockeye salmon, Canadian and U.S. managers agreed to a minimum escapement goal of 1,100 Klukshu chinook salmon and an escapement goal range of 7,500 to 15,000 for Klukshu sockeye salmon for the 2003 season. An escapement goal for Klukshu coho salmon has not yet been developed.

Highlights of the 2003 season included above average returns of both sockeye and coho salmon. A total of 90 chinook salmon was harvested in the aboriginal fishery, which was the third lowest catch on record and was 63% below the 10-year average (1993-2002) of 241 fish. The aboriginal fishery harvested an estimated 2,734 sockeye salmon, 114% above the 10-year average (1993-2002) of 1,276 fish. No coho salmon were harvested in the aboriginal fishery.

Recreational fishers harvested 83 chinook, which is 73% below the 10-year average. The sockeye catch was also below average and amounted to 45 retained and 84 live-released. Due to the record high escapement of late-run sockeye, the daily catch limit was increased from two to four beginning on September 6th. A total of 100 coho salmon was kept and an additional 30 were released. As a result of the good coho salmon returns, the daily catch limit was increased from two to four coho on October 9th. Recreational catches have been adversely affected in recent years by significant changes in river channelisation.

The Klukshu weir count of 1,737 chinook salmon was 39% below the previous 10-year (1993-2002) average of 2,828 fish. The estimated spawning escapement of 1,661 chinook salmon above the weir achieved the minimum escapement goal of 1,100 Klukshu chinook salmon.

The weir count and total escapement of Klukshu River sockeye salmon was 34,362 and 32,120 fish, respectively. The early-run count of 3,084 sockeye was 94% of the previous 10-year (1993-2002) average of 3,299 fish; however, the late-run count of 31,278 fish was the highest count on record and was more than three times the previous 10-year average of 9,983 sockeye salmon. The overall spawning escapement of 32,120 sockeye salmon in the Klukshu River was well above the escapement goal range. An above average sockeye escapement was recorded in the neighbouring tributary of Village Creek where an electronic counter recorded an estimated 4,340 sockeye, 70% above the historical average.

Similar to the sockeye count, which was well above average, the Klukshu weir count of 3,689 coho salmon was 26% above the previous 10-year average of 2,930 fish. The weir is removed prior to the completion of the coho return due to icing conditions and generally does not include fish that migrate after mid-October. In 2003, the weir was pulled on October 13th.

Several projects were continued in 2003 to collect background data for use in developing abundance-based management regimes for chinook and sockeye salmon. These included mark-recapture programs to estimate the escapement of chinook and sockeye in the Alsek drainage. DNA sampling was also conducted to add samples to the stock ID baseline for this system. A sockeye radio telemetry study was continued to determine run-timing and spawning distribution. Preliminary results of the sockeye mark-recapture program indicated an in-river run size upstream of the US Dry Bay fishery of 81,472 fish (the Dry Bay fishery caught an additional 39,719 sockeye). In the radio-telemetry program, sockeye were found to be widely distributed throughout the Tatshenshini drainage as well as in the Alsek River. Previously undocumented spawning areas were found in the Alsek River although no fish were tracked above upstream of Turnback Canyon.

Northern British Columbia Pink Salmon

Areas 3-1 to 3-4 Pink Net Catch

For the year 2003, Canada was to manage the 3-1 to 3-4 net fishery to achieve an annual catch share of 2.49 percent of the annual allowable harvest (AAH) of Alaskan Districts 101, 102 and 103 pink salmon.

In the Canadian northern boundary area, pink salmon returns were anticipated to be average for both Area 3 and Area 4. Returns to Area 3 were above average while Area 4 pinks returned as anticipated. A strong return was expected for the SE Alaska pink stocks adjacent to the northern boundary area. The Canadian pink catch in 2003 in Sub-areas 3-1 to 3-4 was 667,103 and a very preliminary estimate of the Alaska stock component of this catch is estimated to be 396,259, or 1.98 % of the AAH, and is below the allotted 2.49 % of the AAH.

The total Canadian pink catch of 667,103 in sub-areas 3-1 to 3-4 is much lower than the 1985-2000 average catch of 1.46 million. The average harvest resulted from a combination of average returns of Skeena area pink stocks, and management restraints on Canadian net fisheries in Sub areas 3-1 to 3-4 to reduce the harvest of less abundant Skeena coho stocks. The percentage of the 2003 Area 3 net catch taken in sub-areas (1-4) was 34.2%, which was well below the 1985-2000 average of 58%.

Pink escapements in 2003 were at or above target in Area 3 and the Skeena.

Area 1 Pink Troll Catch

Area 1 Pink Troll Catch

For the year 2003, Canada was to manage the Area 1 troll fishery to achieve an annual catch share of 2.57 percent of the annual allowable harvest (AAH) of Alaskan Districts 101, 102 and 103 pink salmon.

The Canadian commercial troll fishery in Area 1 was open in the northern portion of the area from August 1 to September 30. The fishery harvested a total of 98,347 pink salmon, with an estimated of 67,564, or 0.33%, being of Alaskan origin. This will be well below the annex agreement for 2.57 percent of the AAH of Alaskan Districts 101, 102 and 103 pink salmon.

Chinook Salmon

AABM Fisheries

North Coast B.C. (NBC) troll and Queen Charlotte Islands (QCI) sport fisheries:

The pre-season abundance index for North Coast B.C. troll and Q.C.I. Sport fisheries in 2003 was 1.48, which allows a total catch of 197,100 chinook in these fisheries. Preliminary estimates indicate a total catch of 191,657 chinook. 137,357 caught in commercial troll fisheries and 54,300 caught in sport fisheries.

The North Coast B.C. troll fishery was opened for chinook fishing from October 1, 2002 to May 12, 2003, from June 19 to July 5 and from September 4 to 9, 2003. A total of 136,257 chinook were caught. The size limit was 67 cm. Barbless hooks and revival boxes were mandatory in the troll fishery. A test fishery was conducted in areas off the west coast of the Queen Charlotte Islands. 1100 legal sized chinook were caught. This catch is included in the total for the troll fishery.

Sport fishing was open with a daily limit of 2 chinook and a possession limit of 4 chinook. An estimated 54,300 chinook were caught. A minimum size limit of 45 cm was in effect and barbless hooks were mandatory in the sport fishery.

ISBM Fisheries

Northern and Central BC Fisheries:

Fisheries included in this category are commercial net fisheries throughout north and central BC, marine sport fisheries along the mainland coast and freshwater sport, and Native fisheries in both marine and freshwater areas. Under the PST, obligations in these fisheries are for a general harvest rate reduction (estimated in aggregate across fisheries) for ocean mixed-stock fisheries and for stock-specific objectives (i.e., achieving the escapement goal) in terminal areas.

North Coast commercial gillnet catches totalled 10,230 chinook from Areas 3 to 6 (from hail catch data). The majority (60%) of this catch occurred in Area 4 and virtually all of the remainder was caught in Area 3. No chinook were reported caught with gillnets from Area 6 and only 14 were reported from Area 5. The Area 4 catch reflects similar terminal runs of chinook salmon to the Skeena River in 2003 and similar fisheries. The Skeena River test fishery index for chinook salmon increased slightly over the value in 2002. A total of 1636 large chinook and 134 jacks were caught in the test fishery.

Central coast commercial seine and gillnet fisheries are managed primarily by Central Coast; however, catch is monitored and estimated through catch monitoring programs operated primarily out of South Coast. As a result, central coast gillnet fisheries Area B seine and Area D gillnet are estimated through the South Coast section of this report.

Tidal sport catches near the mainland coast of Northern BC have not been estimated for 2003. Catch in Areas 3 & 4 were likely similar to 2002 near 8,000 chinook. A preliminary estimate of catch from the Skeena River sport fishery (downstream of Terrace, B.C.) included 6280 chinook. Effort continues to increase in this fishery. Effort levels in the lower Skeena River in 2003 were double those measured by the last survey in 1995.

Central coast sport fisheries are conducted primarily in Johnstone Strait and Northwest Vancouver Island (Area 27). Preliminary catch estimates indicate 7,692 chinook were harvested in Johnstone Strait and 836 harvested in Area 27.

Catches by First Nations in the North Coast were in excess of 21,306. Nisga'a catches from the Nass River were 7349 chinook. Haida catches on the Queen Charlotte Islands were estimated at 2530 chinook. Catches from some Native fisheries in the Skeena have not been reported but current estimates are 11,427 chinook. Overall catch of chinook by First Nations on the Skeena has increased since 2002 and some areas caught significantly more chinook. For example, 3676 chinook were reported from Moricetown Canyon, which represents three times the catch reported from the same area in 2002.

Catches by First Nations in the Central Coast have been estimated at 229 chinook.

Overview of Northern BC Chinook Stock Status

Since an assessment of the ISBM fisheries will be relative to the escapements achieved in the chinook indicator stocks, a brief overview of the 2002 returns is provided. Northern BC terminal runs were similar to 2002: Yakoun River escapement was estimated at 4000 chinook. Preliminary estimates of Nass River escapements were improved at 26,078. Skeena River chinook escapements showed a similar improvement over 2002 and were estimated at approximately 57,888. Kitimat River escapements were estimated at 20,000, slightly less than 2002 (hatchery staff estimate).

Overview of Central Coast Chinook Stock Status

Johnstone Strait/Mainland Inlet Chinook

Currently only 3 systems are monitored in Areas 12 and 13 with some level of consistency. The Nimpkish River is monitored using standardized swim surveys and stream walks by the hatchery staff. A fish wheel is used in the mainstem and a fence on Devereux Creek (small tributary) to track escapement on the Klinaklini system, and the Quinsam hatchery staff conduct a mark-recapture program to estimate escapement on the Quinsam/Campbell system. Other systems are covered using intermittent aerial surveys.

Nimpkish: Escapement of chinook for 2003 appears to be similar to 2002 and therefore slightly above average. Brood stock goal partially obtained.

Klinaklini: The return of chinook adults and jacks to the system was better than average and the second highest escapement since the inception of the assessment program in 1997. It should be noted that escapement estimates for the Klinaklini improved dramatically in 1997 when the intensive assessment program began. Total enumeration of Devereux Creek spawners was accomplished this year using an underwater camera. The escapement totals for Devereux Creek appear to be healthy considering the size of the stream.

Quinsam/Campbell: Preliminary escapement estimates indicate that the total return for both adults and jacks in both Campbell and Quinsam Rivers will be similar to 2002, therefore better than average. The improved escapements over the past couple of years seem to be holding at a steady level. Brood stock goal of 1454 adults attained.

Fraser River Sockeye and Pink Salmon

Fraser River Sockeye Salmon

The sockeye run-size forecast for 2003 resulted in a preseason plan that incorporated both the 50% and 75% probability levels of abundance (5.5 million and 3.1 million respectively) with a predicted diversion through Johnstone Strait of 64% The preseason plan also incorporated provisions to protect Early Stuart and Late Run stocks. The U.S. share of the annual Fraser River sockeye salmon total allowable catch (TAC), harvested in the waters of Washington State, was set at 16.5% with an adjustment of a 9,000 payback from an overage in U.S. catch in 2000. Brood year returns for Fraser sockeye stocks experienced highly variable survival rates. The 2003 50% probability forecasts for the four management aggregates are as follows: Early Stuart 89,000; Early Summer 412,000; mid-Summer Run 3.4 million; and Late Run 1.6 million. Due to poor egg to fry survival in the 1999 brood year, the Fraser River Panel decided to adopt the 75% probability forecast of 57,000 for Early Stuart sockeye for pre-season planning purposes. Additionally, there were concerns expressed for the potential impacts on Early Summer stocks relating to adverse in-river migration conditions as a result of low snow pack and probable low flow and high water temperature situations.

Late Run sockeye have historically delayed in the Gulf of Georgia for 4-8 weeks prior to entering the Fraser River. In recent years this behaviour has changed to one where there has been immediate river entry. This unusual behaviour has been associated with high levels of en-route and pre-spawn mortality, escalating to levels of 90% and greater in 2000 and 2001, though dropping substantially in 2002 (<20%). To address the high probability of continuing en route and pre-spawning mortality in 2003, the Fraser River Panel adopted a precautionary management strategy outlined below.

The pre-season plan made several assumptions, including: that Late Run sockeye would continue their early migration behaviour with an associated en route mortality rate of 47% based on a 50% peak migration date in Area 20 of September 12 (average 50% migration date in dominant and sub-dominant Adams years since 1996); that the capability to assess in-season run size and migration timing in a timely manner would be good for Summer Run sockeye, but poor for Late Run sockeye; and that the approach to management of fisheries would be responsive to in-season information. As a result, fisheries were planned keeping to the guidelines in the table below:

In-river Mortality Rate on Late-run > 47%, or Abundance < P-50% level	In-river Mortality Rate on Late-run < 47%, and/or Abundance > P-50% level
Exploitation Rate will be reduced from 25% down to a range between 15% and 25% based on Canada's escapement target.	Consideration will be given to increasing Exploitation Rate to levels exceeding 25% consistent with meeting Canada's Late-run escapement target.

As well, fisheries directed at Fraser River pink salmon would take Late Run sockeye concerns into account.

The Canadian fishing plan also addressed conservation specific-concerns for:

Upper Fraser River/Thompson River coho
Nimpkish River, Rivers Inlet & Smith Inlet sockeye
West Coast of Vancouver Island Chinook
Thompson River steelhead
Inshore Rockfish
Cultus & Sakinaw Lake sockeye

The current in-season estimated returns of Fraser River sockeye compared to the forecasts used for pre-season planning purposes are shown in the table below:

Run Timing Group	**Pre season forecast (% probability forecast)**	**Final In-Season estimate of run size using Mission data**
Early Stuart	57,000 (75%)	30,000
Early Summer	412,000 (50%)	585,000
Mid-Summer	3,400,000 (50%)	3,200,000
Late Run	1,600,000 (50%)	1,600,000
Total Fraser sockeye	***5,500,000***	***5,400,000***

The total Canadian harvest of 1.93 million sockeye slightly exceeded the pre-season modelled (50p-09) goal of 1.89 million sockeye. The final in-season estimated exploitation rate on Late-late sockeye stocks of 29% is above the pre-season goal of 15% based on the current estimate of run size and river entry date. Several factors contributed to this: the actual diversion rate through Johnstone Strait was higher than expected, which provided greater opportunities for the Canadian commercial fleet; the Early Summer run timing group returned stronger than forecast, allowing more opportunities to harvest co-migrating Summer run stocks; and daily Late Run (excluding Birkenhead) proportions which varied greatly led to full fleet fisheries targeting on Summer run fish when Late Run proportions were believed to be low.

Fisheries

Harvest opportunities on summers were limited by the early migration timing of the Late Run stocks, which were first identified in approach waters on July 21st. This was the second year in which DNA analysis was used extensively to identify the different Fraser River sockeye stocks. Large daily variation in Late Run composition occurred, similar to 2002.

Harvest opportunities were available in Canada for all user groups, including First Nations, commercial, selective and recreational fisheries. The final in-season estimates of escapement provided from the Mission hydoacoustics program suggest that the gross escapement goals were not achieved for the Early Stuart and Late run timing groups and were exceeded for the Early Summer and Summer groups. The extraordinary return of Fraser River pink salmon in 2003 made the estimation of Late Run sockeye escapement more difficult. The traditional method of using the hydroacoustic program at Mission had to be discontinued at the end of August as the sheer number of pinks in the river did not allow for an accurate count of sockeye. The remainder of Late Run escapement was estimated using expanded test fishing CPUE from the Whonnock test fishery.

Late Run sockeye migration into the Fraser River in 2003 was early. DNA analysis of samples taken from the Cottonwood in-river test fishery showed the presence of Late Run sockeye beginning August 1st, which steadily progressed through the season. The early arrival of the Late Run sockeye and the daily variation in Late Run proportion in approach waters resulted in the 25% exploitation rate ceiling being achieved earlier than anticipated pre-season.

Preliminary estimates of Fraser River sockeye catch in 2003 are as follows:

Total Fraser Sockeye Caught	2,242,268
Test/charter fisheries	108,000
Canadian Catch	1,889,000
Canadian commercial fisheries (includes commercial selective fisheries)	1,042,986
Canadian First Nation fisheries	781,000
Canadian recreational fisheries	65,282
United States Catch	244,400
U.S. Treaty Indian non-Indian fisheries	244,000
U.S. Treaty Indian ceremonial fisheries	400

The above numbers reflect the PSC Sockeye Review Sheet from September 26, 2003. Test/charter catch includes Albion test fishery.

Stock Status

The preliminary spawning ground escapement estimate for Early Stuart sockeye is 13,157 which is well below the escapement goal of 75,000. The in-season gross escapement estimates from the Mission hydroacoustics program for the Early Summer, Mid-Summer Run, Birkenhead, and Late Run (excluding Birkenhead) escapement are 384,000 (Early Summer); 2,216,800 (Summer); 259,000 (Birkenhead); and 904,000 (Lates). A summary of preliminary spawning escapement estimates for all stock groups will not be available until January, 2004.

The Early Summer run timing group experienced high water temperatures during their in-river migration. The environmental management adjustment model projected an en-route loss of 76% of the spawning escapement target given the water temperature during the Early Summer migration. Due to the earlier than expected arrival of Late Run (excluding Birkenhead) sockeye into the Fraser River (50% peak date of September 01 at Mission, as opposed to September 12), the expected en-route mortality is 77% as projected by the environmental management adjustment model. This early entry of Late Run sockeye into the Fraser River with its resultant management adjustment reduced the allowable exploitation rate on Late Run sockeye to 15% resulting in both the US and Canada exceeding their respective allowable portions of the TAC.

Fraser River Pink Salmon

The forecasts for Fraser River pink salmon at the 75% and 50% probability levels (11,700,000 and 17,300,000 respectively) were well above the escapement goal of 6,000,000. However, concerns for co-migrating Late Run sockeye and other species of concern limited harvest opportunities. It was agreed by both countries that any fisheries directed at Fraser River pink salmon would be conducted in a manner consistent with the Late Run sockeye guidelines.

Preliminary estimates of Fraser River pink catch totaled are as follows:

Total Fraser Pink Catch	2,168,388
Test/charter fisheries	43,000
Canadian Catch	901,000
Canadian commercial fisheries (including selective)	1,149,189
Canadian First Nation fisheries	56,000
Canadian recreational fisheries	147,199
United States Catch	773,100
U.S. Treaty Indian non-Indian fisheries	773,000
U.S. Treaty Indian ceremonial fisheries	100
U.S. recreational fisheries	not avail.

The above numbers reflect the catch estimates reported on the PSC Sockeye Review Sheet on September 26, 2003. Test/charter catch includes Albion test fishery.

The final in-season estimate of run size for Fraser River pink salmon is 26,000,000 fish, with a 50% peak of migration through Area 20 of August 25, which is six days earlier than the pre-season estimate of August 31. The PSC was not able to generate daily estimates of pink salmon migration in the lower Fraser River. A mark-recapture estimate of adult escapement will not be available this year. However, a fry estimate will be conducted in the spring of 2004. The forecast return of adults in 2005 will be based upon the total estimated fry emergence.

Southern B.C. Chinook Salmon

Chinook salmon in southern BC are managed under the coastwide management regime agreed in the 1999 PST. This includes abundance based management in aggregate fisheries (AABM) in southeast Alaska, northern BC, and off the WCVI. It also includes subsequent fisheries managed to harvest rate restrictions on an individual stock basis (ISBM).

In addition to the PST regime, Canada implements management actions as required to ensure conservation of Canadian origin chinook and meet domestic allocation requirements. In 2003 specific management actions were taken to protect WCVI origin Chinook in Canadian fisheries, the harvest of which was restricted to an exploitation rate of up to 15%.

WCVI AABM Chinook fisheries

The WCVI troll fishery and the "outside" sport fishery are included in AABM fisheries. For the period October 2002 through September 2003 the chinook abundance index was 0.85 of the base period (calib #0308). This provided a total allowable catch of 181,825 chinook in the WCVI troll and outside sport fishery.

Table 1 Preliminary estimates of AABM catch for 2003.

AABM Troll Catch	151,826
AABM Sport Catch	23,995
Total AABM Catch	**175, 821**

WCVI troll fishery – Chinook AABM

In 2003, WCVI chinook fisheries were shaped by conservation concerns for spring run timing upper Fraser River chinook, upper Fraser River and Thompson River coho, and WCVI origin chinook salmon. To protect the early spring runs of upper Fraser Chinook troll fisheries were closed early March to late April. To protect Thompson coho, no chinook troll fisheries were conducted between late June and late September when coho recruit to the fishery and when WCVI chinook were most vulnerable to the troll fishery. Selective fishing practices were mandatory, including single barbless hooks and "revival tanks" for resuscitating coho salmon prior to release. In addition, where possible fisheries were shaped to target strong returns to Canadian hatchery stocks, Columbia River and California, etc. Size limits for commercial troll remained unchanged for 2003 at 55 cm (fork length).

Since 1999, a major objective for the management of the WCVI troll fishery was to distribute the catch throughout the fall-winter-spring-summer periods. The expected effect was to improve the economic base for the fleet and local communities while increasing flexibility in harvest opportunities and reducing distributing the exploitation over a broader suite of stocks.

Table 2. WCVI Area G troll fisheries during the 2002/2003 period.

Areas open*	Majority of catch from:	Fishing Period	Chinook Catch	Comments on fishery
23-27, 123-127	123, 126	October 1–7, 2002	11,924	Full fleet fishery
23-27, 123-127	23,123	November 1-30, 2002	331	Full fleet fishery
23-27, 123-127	23,123	December 1-31, 2002	449	Full fleet fishery
23-27, 123-127	23,123	January 1-31, 2003	1,887	Full fleet fishery
23-27, 123-127	23,123	February 1-3, 2003	1,477	Full fleet fishery
23-27, 123-127	123, 126	March 1-11, 2003	2,510	Full fleet fishery
23-27, 123-127	123, 126, 127	April 17-30, 2003	31,722	Full fleet fishery
23-27, 123-127	123, 126, 127	May 1-24, 2003	76,378	Full fleet fishery
23-27, 123-127	123	June 4-5, 2003	25,148	Full fleet fishery
		TOTAL	**151,826**	

* sub-areas closures were in effect within many of the open statistical areas. Refer to DFO Fishery Notices for further clarification.

Fisheries were monitored to determine encounter rates of other species and released chinook. Biological sampling was conducted for such things as size distributions, and stock compositions (via CWT, DNA and otolith samples).

WCVI sport fishery – Chinook AABM

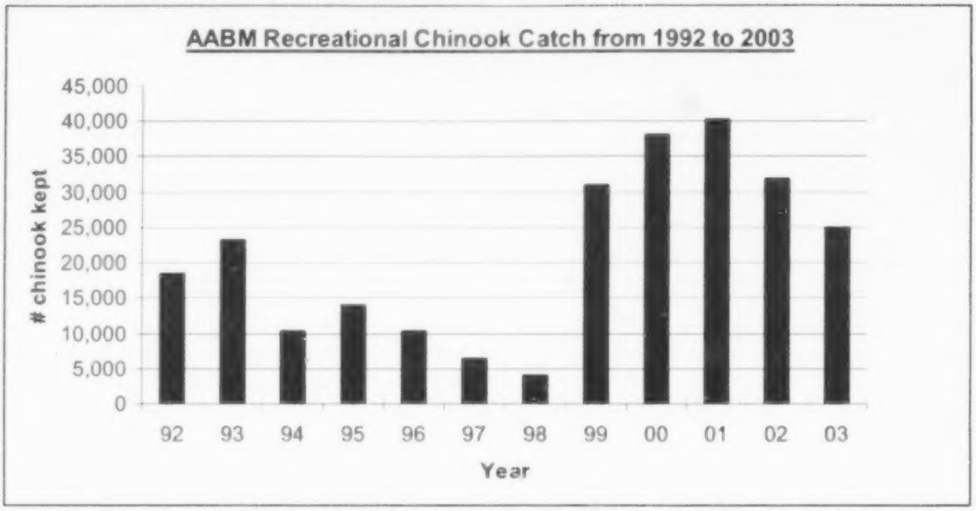
Selective fishing regulations such as barbless hooks and size regulations were enforced in order to lower post-release mortality and impacts on stocks of concern. For the outside sport fishery the chinook daily bag limit was two chinook greater than 45 cm. WCVI chinook stocks of concern are assumed to migrate along near shore areas. As a result, additional conservation measures were not imposed with in the WCVI AABM. The estimated 2003 "AABM" sport catch was approximately 23,995 chinook.

Table 3. AABM chinook sport catch by statistical area.

Statistical Area	Catch
21/121	5541
23/123	15345
24/124	1940
25/125	484
26/126	685
TOTAL	**23,995**

In 2003, 26% less AABM chinook were caught than in 2002. Effort was 15% lower in 2003 than in 2002, with approximately 31,587 boat trips being made during the 2003 season.

Figure 1 AABM Chinook catch from 1992-2003.



The sport fishery was monitored through a creel survey and reported catches from lodges. Creel observers conducted 11,294 fishing interviews from 19 landing sites from June 01 until September 30 representing 14% effort coverage for the 2003 season.

Southern BC Chinook ISBM

Most Southern BC commercial fisheries were regulated so that impact on WCVI chinook stocks was minimized. In addition to these general restrictions area and time closures were in place to protect returning upper Fraser and WCVI chinook stocks during sport and commercial fisheries. There was a general requirement to apply selective fishing techniques, including area and gear restrictions and the mandatory use of revival tanks in all commercial fisheries. Catch monitoring included requirements for daily catch reporting, mandatory logbooks, hailing catches on a regular basis, independent on-board observers on vessels when requested. Post-release mortality information for chinook included in ISBM management were determined from studies conducted in 2000-2001 and detailed in the Canadian Stock Assessment Secretariat, Research Document 99/128 (CSAS, Doc 99/128).

Table 4. Preliminary estimate of commercial and sport ISBM catch for 2003.

ISBM Commercial Catch	16,689
ISBM Sport Catch*	117,500
Total ISBM Catch	**134,189**

*includes Fraser River sport catch

First Nations Fisheries

Information is currently being collected and catch summaries are not available at this time.

Commercial Fisheries

Commercial fisheries included in ISBM management: net fisheries in Johnstone Strait, Mainland Inlets, the Strait of Georgia, the Fraser River, Juan de Fuca Strait and the WCVI; troll fisheries in the Johnstone Strait, Mainland Inlets, the Strait of Georgia and inside WCVI. The majority of these commercial fisheries were not permitted to retain chinook, and most of the chinook retention was by specific ISBM targeting fisheries. In general these fisheries were quite limited during 2003.

Table 5. Estimates of chinook encounters and mortalities for all license areas in 2003.

License Area	B	D	E	G	H	**Total**
Total Chinook-Kept	0	9,416	6,157	5	1,111	**16,689**
Total Chinook-Released	3,113	310	9	0	724	**4,156**
Mortality Rates	15-25%	60%	60%	26%	26%	
Total Mortality	**488**	**9,602**	**6,163**	**5**	**1,300**	**17,558**

AREA B

No Area B Seine fisheries were permitted to retain chinook in 2003. The impacts from Area B seine fisheries on ISBM chinook stocks are primarily from the bycatch and subsequent release mortalities from each component fishery.

Table 6 Estimates of chinook encounters and mortalities for Area B seines in 2003.

Fishery	**Kept**	**Released**	**Mortality Rate**	**Total Mortality**
Johnstone Strait	0	2,865	15%	430
Juan de Fuca Strait	0	146	25%	37
Barkley Sound	0	16	15%	3
Nitinat	0	86	20%	18
Total	0	3,113		488

AREA D

Area D gillnet fisheries were permitted to retain chinook in 2003. Chinook mortality was primarily due to retention as very few chinook were released (<4% of total chinook catch).

Table 7 Estimates of chinook encounters and mortalities for Area D gillnets in 2003.

Fishery	Kept	Released	Mortality Rate	Total Mortality
Johnstone Strait	352	212	60%	480
Strait of Georgia	7	0	60%	7
Bute Inlet	0	8	60%	5
Barkley Sound	4,954	16	60%	4,963
Nootka Sound	4,103	74	60%	4,147
Total	9,416	310		9602

AREA E

Area E gillnet fisheries targeting Fraser sockeye were permitted to retain chinook in 2003. The impacts from Area E gillnet fisheries on ISBM chinook stocks are primarily from retention in the Fraser Sockeye fishery.

Table 8 Estimates of chinook encounters and mortalities for Area E gillnets in 2003.

Fishery	Kept	Released	Mortality Rate	Total Mortality
Fraser River	6,157	0	60%	6,157
Nitinat	0	9	60%	6
Total	6,157	9		6,163

AREA G

Area G troll fisheries targeted ISBM chinook in a portion of the WCVI troll fishery, as well as targeting Somass chinook in Alberni Inlet. Area G troll fisheries were not permitted to retain chinook in the pink fishery. The impacts on ISBM chinook stocks from Area G troll fisheries on are primarily due to chinook retention in the WCVI chinook fishery, as well as the release of sub-legal chinook in the WCVI chinook fishery.

Table 9 Estimates of chinook encounters and mortalities for Area G troll in 2003.

Fishery	Kept	Released	Mortality Rate	Total Mortality
Barkley Sound	5	0	26%	5

AREA H

Area H troll fisheries were permitted to retain ISBM chinook in the Fraser sockeye fisheries. Area H troll fisheries were not permitted to retain chinook in the Fraser chum fishery. The impacts on ISBM chinook stocks from Area H troll fisheries on are primarily due to chinook retention in the Johnstone Strait Fraser sockeye fishery, as well as the release of bycatch and subsequent mortality in the Fraser chum fishery.

Table 10 Estimates of chinook encounters and mortalities for Area H troll in 2003.

Fishery	**Kept**	**Released**	**Mortality Rate**	**Total Mortality**
Johnstone Strait	1,099	717	26%	1,286
WCVI Area's 23-27	12	7	26%	14
Total	1,111	724		1,300

Marine Sport Fisheries

West Coast Vancouver Island

The WCVI "ISBM" sport fishery for chinook was less restricted than in 2002. Most spot closures on near-shore areas were removed; however, inshore area closures were in effect to reduce impacts of the recreational fishery on non-enhanced WCVI chinook stocks. This included areas with "closed to salmon fishing" or "no fin fishing" areas. The 2003 recreational chinook catch for WCVI ISBM chinook in 2003 was 51,622. The minimum size limit was 45 cm (fork length).

Table 11. ISBM sport catch by statistical area.

Year	WCVI Fishing Area	Survey Period	Effort	Chinook Kept
2003	23	June-September	5,260	29,739
2003	24	June-September	3,631	797
2003	25	June-September	11,655	19,038
2003	26	June-September	1,977	1,212
2003	27	June-September	2,133	836
Total			**72,016**	**51,622**

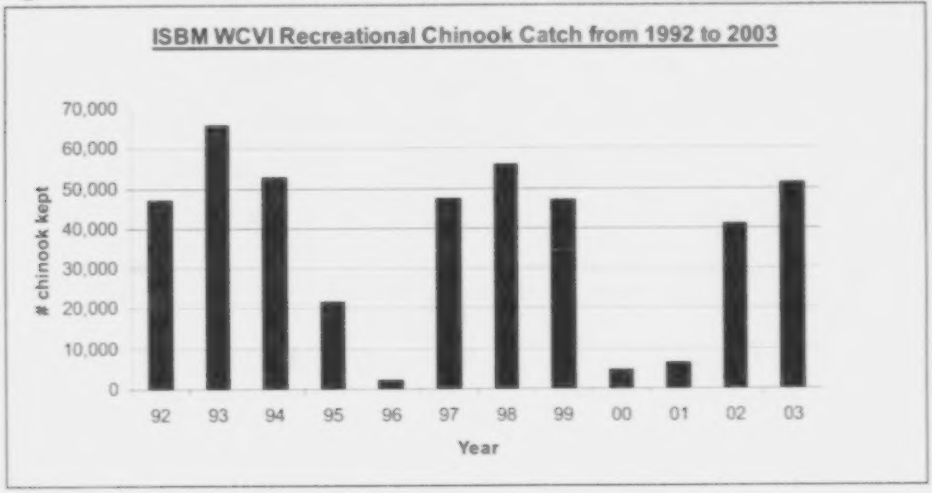
An estimate of the 2002 total chinook mortality in the WCVI sport fishery is provided in Table 12.

Table 12. Estimate of the mortality incurred in the WCVI ISBM chinook fishery.

Area	Survey Dates	Catch	Effort	Legal Release	Mortality @ 15%	Sub-legal Release	Mortality @ 32%	Total Mortality
Inside WCVI	July-Sept.	51,622	72,016	14,362	2,154	7,065	2,261	56,037

In 2003 21% more ISBM chinook were caught than in 2002. Effort increased 26% in 2003 over 2002, with approximately 49,758 boat trips being made in the 2003 season (Figure 2).

Figure 2. WCVI ISBM chinook catch from 1992-2003.



NWVI

Kyuquot area 26, a large portion around Rugged Point was included in the July 15 to Oct. 1 salmon fishing closure. Near shore areas of 26 had a one chinook over 77cm and one chinook under 77cm, two chinook per day limit.

Nootka Sound and Esperanza Inlet area 25, had a one chinook over 77cm and one chinook under 77cm, two chinook per day limit. Terminal areas of Conuma River at the head of Nootka Sound had a two chinook greater than 45cm limit. In most terminal areas with non enhanced chinook stocks, a "no fin fish" closure was in place from July 15 until October 15. This closure was to help mitigate angling pressure on area 25 stocks of concern as they were holding prior to entering natal streams.

SWVI

Clayoquot Sound area 24 chinook are a stock of concern, near shore areas had a one chinook over 77cm and one chinook under 77cm, two chinook per day limit. Inshore there was retention of two chinook smaller than 77cm. Terminal areas were closed to salmon fishing August 1 until October 31.

Barkley Sound and Alberni Inlet area 23, Barkley Sound had a one chinook over 77cm and one chinook under 77cm, two chinook per day limit. Alberni Inlet had areas with "no fishing for fin fish" to protect stocks of concern such as Nahmint chinook. Further toward the head of the Inlet, retention of two chinook greater than 45cm was in effect.

Strait of Georgia

For Johnstone Strait and the Strait of Georgia north of Cadboro Point sport catch regulations included an annual bag limit of 15, a daily bag limit of 2 and a size limit of 62 cm. For the Canadian portion of Juan de Fuca Strait, the daily bag limit of 2 chinook over 45cm and a seasonal limit of 20 were in effect.

The catches in these marine fisheries are monitored by creel surveys in two main areas: 1) Juan de Fuca sport including Victoria and Juan de Fuca Strait through Area 20-1, and 2) Strait of Georgia. Monitoring of the Strait of Georgia fishery (April to September) and Juan de Fuca Strait sport fishery (January to December) has been fairly consistent from year to year using an access point (landing site) survey for collecting catch and bio-data information combined with an aerial survey for effort counts.

Table 13. 2003 catch and effort for inside sport ISBM fisheries.

Year	Fishing Area	Survey Period	Effort	Chinook Kept
2003	Juan de Fuca St.	Jan-Oct	55,386	26,630
2003	Strait of Georgia	April-Oct	124,248	19,981
2003	Johnstone Strait	July-Aug	13,810	7,692

Table 14. 2003 mortality estimates for inside sport ISBM fisheries.

Area	Survey Dates	Catch	Effort	Legal Release	Mortality @ 15%	Sub-legal Release	Mortality @ 32%	Total Mortality
Juan de Fuca Strait	Jan.-Dec.*	26,630	55,386	3,732	560	5,832	1,866	29,056
Georgia Strait	April-Oct.	19,981	124,248	2,357	354	17,260	5,523	25,858
Johnstone Strait	Jul-Aug	7,692	13,810	988	657	3,392	1,029	8,283
TOTALS:		**54,303**	**196,608**	**7,037**	**1,056**	**26,484**	**8,419**	**63,205**

* data to end of October only, total mortality = catch + release x mortality rate

The overall effort in Georgia Strait decreased by 22% and chinook catch decreased by 62%, largely on the basis of reduced catch and effort in the Campbell River and Courtenay areas. The southern Georgia Strait fishing effort and catch was consistent with 2002. Juan de Fuca Strait effort decreased by 11% and catch by 6%.

As part of the creel surveys, encounter rate information was collected for legal and sub-legal chinook and for legal and sub-legal coho size categories. Legal and sub-legal releases of chinook in Georgia Strait decreased over 2002 by 61% while a decrease of 47% was experienced in Juan De Fuca Strait.

Figure 3. Johnstone Strait ISBM chinook catch from 1992-2003.

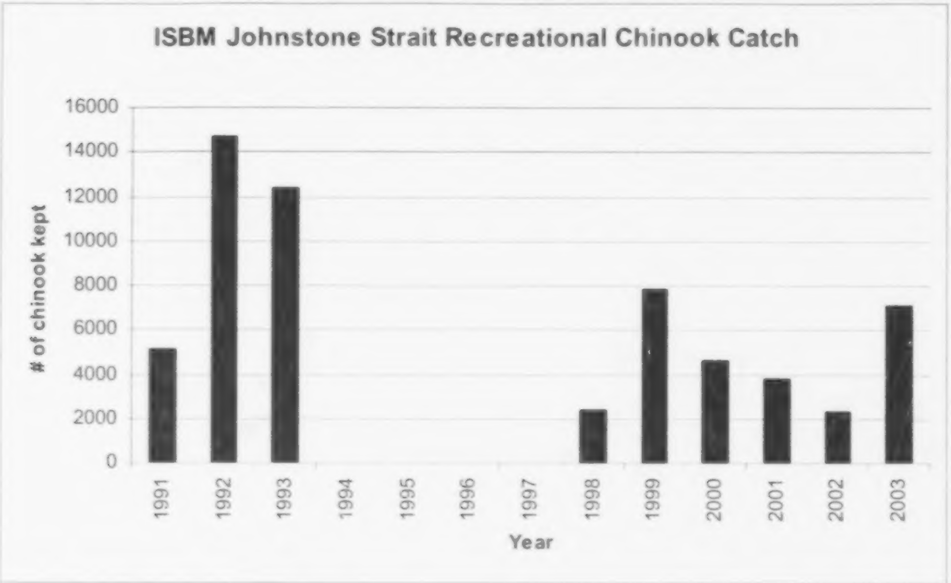
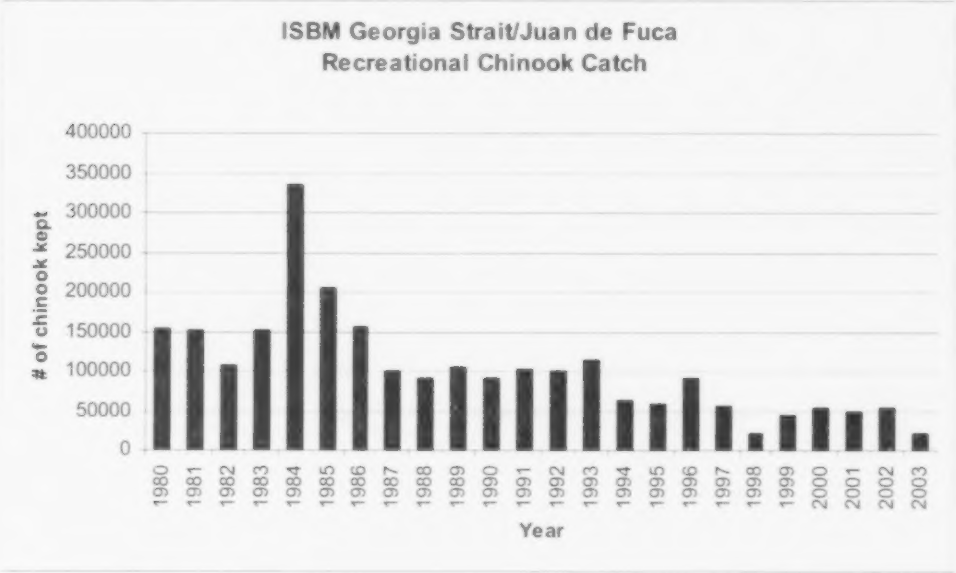


Figure 4. Strait of Georgia/Juan de Fuca ISBM chinook catch from 1992-2003.



Non-Tidal Sport Fisheries

Strait of Georgia

During 2003, there was a non-tidal Chinook sport fishing opportunity on the Puntledge River (Area 14) from October 1 to November 30, 2003. Anglers were permitted to retain one Chinook (no length restrictions). The fishery was monitored from October 1 to November 14, 2003 using a roving creel survey design with on-ground effort counts. There was an estimated 480 chinook encountered, of which less than 50 were retained (due to the condition of the fish).

West Coast Vancouver Island

A surplus of chinook salmon and coho were forecast to return to the Somass system in 2003. The IFMP indicated recreational opportunity should be provided for chinook and coho in this system. In 2003 there was a non-tidal chinook and coho sport fishing opportunity on the Somass and Stamp Rivers (Area 23) from September 3 to December 31. The 2003 Somass and Stamp Rivers recreational fishing plan included the opening of a portion of the Stamp River that had been closed to salmon fishing for several years as a chinook conservation measure. Creel observations were conducted from October 17 until November 11. Monitoring started late in 2003 due to access restrictions placed by the province. Fire hazards caused by long periods with no precipitation and warm weather prevented anglers from accessing the river. Less than 200 chinook were kept in this fishery; however, approximately 1000 chinook were released. Dialogue with anglers concluded the condition of the chinook resulted in high releases. Most of the chinook caught were in advanced stages of spawning or marked up from their migration. These are in-season estimates and will be updated upon data entry completion. Chinook retention was also permitted on a number of other systems including the Nitinat, and Conuma Rivers. Effort and catches were generally low however no estimate is available.

Stock Status

Upper Fraser Chinook

To date, only preliminary numbers are available; data are not yet validated, and intensive population estimates have yet to be conducted. Early spring chinook returns looked good at Spius and Coldwater (>800 spawners each); however, upper Chilcotin was only fair. Most escapements for upper river and later lower Thompson spring populations were above average (Bowron, >10, 000; Nicola approx. 14,000 spawners); however, some southern populations (Lemieux Cr., Salmon R.) fish failed to enter their natal streams or had extreme difficulty due to prolonged drought conditions. Summer chinook returns continued to be strong. Yearling summer returns were reasonable, with some bright spots (Chilko.>15,000). Under-yearling summer returns were very good with South Thompson ~35,000, and Lower Shuswap ~22,000.

Lower Fraser Chinook

Spring-run: Early returning chinook in the lower Fraser (Birkenhead and upper Pitt Rivers) remain low. No assessment of spring-run upper Chilliwack River (Dolly Varden Creek) population was conducted. Birkenhead River escapement in 2003 was close to the 5-year average (<500 fish), but down for the second straight year. No trend for increasing escapements.

Summer-run: Summer-run chinook in the lower Fraser River do not have a reliable time series of escapement information. Extensive visual surveys were reduced in 2003; however, the information obtained indicates a moderate stock status.

Fall-run: Lower Fraser River fall-timed chinook salmon (Harrison River and Harrison River transplants to the Chilliwack River) current year escapement information is not available at the present time. 2003 projects are currently underway; however, the 2003 terminal run-size forecast for this stock is less than the average of the last three years, partly due to events in the 2000 brood-year (expected to return as 3-year olds in 2003). First, the 2000 natural returns to the Harrison River were lowest of last six years, and second, the number of 2000 brood-year smolts released from the Chilliwack hatchery was reduced by almost 50%. Though a lesser escapement to the Harrison River in 2003 may be expected, the forecast is within the lower bound of the escapement goal range.

Strait of Georgia Chinook

This has been a year of extremes. We experienced very low water levels since the summer and this was followed by dramatic sudden increases in flow. We noted very heavy rains over a few days between Oct. 15 and 19 which caused unseasonably high water levels. Fences were topped and made inoperable with flows on the Cowichan, for example, going from 250 CFS on Oct 15 to over 7000 CFS the next day. Water levels have remained high and water clarity poor making accurate escapement enumeration virtually impossible. This also means that spawners may tend to choose less turbulent overflow or side channel areas for spawning which have the potential of drying up when the high flows abate. On the bright side we have noticed increased returns of larger fish (likely four year olds) and some healthy showing of jacks.

Fall Stocks: Upper Georgia Strait hatchery returns (Quinsam, Big Qualicum, Puntledge) have increased in the last few years with historically high escapement in 2001-02 and escapement numbers for 2003 being slightly less but still at near historic high levels.

Lower Georgia Strait natural and enhanced returns were generally down from 2002 with the exception of Nanaimo River which has been relatively stable and recorded an increase over last year. Particularly poor escapement and total return numbers were recorded for Cowichan with a declining trend since 1998. Numbers of spawners have declined substantially from the highs in 1995-96 and reached low levels similar to the 1987-88 crisis that initiated the LGS rebuilding program. There were regular seal sightings in a large holding pool in the lower Cowichan throughout the early part of the run during the low water flow.

Mainland Inlet hatchery returns (Lang, Sliammon) were down from last year with the overall trend showing some decline in recent years. Historic records are very poor for natural stocks (Theodosia, Skwakwa), but recent years have shown critically low numbers of spawners.

Spring/Summer stocks: Escapements in 2003 (Puntledge, Nanaimo) were similar to last year or showed an increase. Returns have been fairly stable with an improving trend in recent years. This is particularly true of the Puntledge since it is assumed that reduction in harbour seal in-river predation has resulted in increased escapement. Anecdotal information about Mainland Inlet summer runs suggests very low levels.

West Coast Vancouver Island Chinook

Escapements to most natural chinook systems appear to be above expected levels, including one area of concern, Kyuquot Sound. However, returns of wild populations in Clayoquot Sound did not improve and remain a concern. Escapement monitoring in 2003 was proceeding well until the extreme flows experienced during mid October. These events prevented any surveys/monitoring for nearly two weeks. Flows were so extreme that chinook migration was probably severely restricted during most of this period. Reliability of estimates should be moderately good.

For the Stamp River / Robertson Creek Hatchery indicator, the terminal return exceeded expected levels. Abundance of age 2 "jack" males more than doubled those observed in 2002 and are the highest since 1991. In-river returns to Conuma and Nitinat hatcheries were much greater than expected, in the range of 30,000 to Conuma and 25,000 to Nitinat River.

Johnstone Strait/Mainland Inlet Chinook

Currently only 3 systems are monitored in Areas 12 and 13 with some level of consistency. The Nimpkish River is monitored using standardized swim surveys and stream walks by the hatchery staff. A fish wheel is used in the mainstem and a fence on Devereux Creek (small tributary) to track escapement on the Klinaklini system, and the Quinsam hatchery staff conduct a mark-recapture program to estimate escapement on the Quinsam/Campbell system. Other systems are covered using intermittent aerial surveys.

Nimpkish: Escapement of chinook for 2003 appears to be similar to 2002 and therefore slightly above average. Brood stock goal partially obtained.

Klinaklini: The return of chinook adults and jacks to the system was better than average and the second highest escapement since the inception of the assessment program in 1997. It should be noted that escapement estimates for the Klinaklini improved dramatically in 1997 when the intensive assessment program began. Total enumeration of Devereux Creek spawners was accomplished this year using an underwater camera. The escapement totals for Devereux Creek appear to be healthy considering the size of the stream.

Quinsam/Campbell: Preliminary escapement estimates indicate that the total return for both adults and jacks in both Campbell and Quinsam Rivers will be similar to 2002, therefore better than average. The improved escapements over the past couple of years seem to be holding at a steady level. Brood stock goal of 1454 adults attained.

Southern BC Coho

The forecast of 2003 abundance suggested BC interior, and especially Thompson River coho, were critically low. The lower Fraser, Georgia basin east and west, and Johnstone Strait coho management units were all forecast to be low status. The WCVI coho management unit was forecast to return at moderate status.

Consequently, in 2003, the BC interior and specifically Thompson River coho were a primary concern in implementing fisheries. Under the Pacific Salmon Treaty coho Abundance Based Management Agreement, the US was limited to a maximum 10% exploitation on Thompson River coho. In Canada, the management objective for coho in 2003 was to limit the total mortality on Thompson River coho to a ceiling of 3% across all Canadian fisheries. The total exploitation on Thompson River coho was therefore limited to a maximum of 13%.

To ensure this limit was not exceeded in Canadian fisheries, non-retention of wild "unmarked" coho was required in all sport and commercial fisheries operating in areas of southern BC where Thompson River coho were known to be prevalent. Only terminal areas along the west coast Vancouver Island (WCVI) were excluded from the requirement for wild coho non-retention.

Some First Nations retained wild coho, usually caught incidental to another target species.
Post-release mortality rates were based on studies conducted in 1999-2001 and detailed in the Canadian Stock Assessment Secretariat, Research Document 99/128 (CSAS, Doc 99/128). The mortality rates for legal size coho by gear type were: Seine 25%; Gillnet North 70% and South 60%; Troll 26%; Sport 10%.
Specific management actions and impacts on wild coho are presented below.

First Nations

Information is currently being collected and catch summaries are not available at this time.

Marine Sport

Sport fisheries can be categorized as occurring in mixed stock areas where specific stocks such as Thompson River coho could not be avoided, and terminal areas where local stocks predominate the catch.

Mixed Stock Areas

Non-retention of wild "unmarked" coho was required in all sport fisheries operating in areas of southern BC where Thompson River coho were known to be prevalent, including the mixed stock areas of the WCVI (Statistical Areas 21-27, 121-127), Strait of Juan de Fuca (Statistical Areas 19-20), Strait of Georgia (Areas 14-19, 28, 29), Johnstone Strait and Queen Charlotte Strait (Statistical Areas 11, 12 and 13). In addition, the use of barbless hooks was mandatory in all these areas.

In 2003, hatchery mark selective fisheries (SMF) were expanded from 2002 fisheries in southern BC by initiating hatchery coho retention in SMF starting July 1 in most areas rather than August.

Table 15. Hatchery mark selective coho fisheries in Southern BC.

Mixed stock fishing area	Daily Limit (marked or unmarked)	Size Limit	Coho Season
WCVI offshore areas 121-127	2 marked	30 cm.	Jul 1 – Dec 31
WCVI inshore areas 20-1, 21, outer portions of 23, 24, 25, 26, 27	2 marked	30 cm.	Jul 1 – Dec 31
Juan de Fuca: areas 19-20	2 marked	30 cm.	Jul 1 – Dec 31
Strait of Georgia: areas 13-19, 28, portions of 29, excluding terminal closures.	2 marked	30 cm.	Jul 1 – Dec 31
Johnstone Strait – Queen Charlotte Strait: all areas	2 marked	30 cm.	Jul 1 – Dec 31

WCVI Recreational Selective Hatchery Mark Only Coho Fishery

Prior to the WCVI SMF, hatchery and wild coho catch totalled 440. This is 95% lower than compared to the same period in 2002. Prior to the SMF WCVI effort was 7,335 boat trips in 2003, compared to 21,506 in 2002 during the same period.

Along the WCVI an estimated 14,754 wild and 9,758 hatchery coho were kept. This is a 23% increase in wild coho and a 31% increase in hatchery coho kept during 2003 WCVI SMF compared to 2002 SMF.

Strait of Georgia Selective Hatchery Mark only Coho Fishery

Coho catch, releases, and mark rates are derived from three main sources; creel survey, guide logbook and test fishing information. It was assumed that test fishing data should provide the most unbiased mark rate information. Both creel survey and guide logbook mark rate data are likely biased low. This likely occurs because although catch data may be quite accurate, the coho unmarked released estimates are likely much less precise and potentially biased low. Further analysis of independent recreational observer data and daily log card data is required to assess the accuracy and precision of release information. The analytical approach was to use whatever combination of information we had that best reflects the mark rate for each area. In most cases we initially used the creel survey results and augmented them with logbook and test fishing information where and when available.

As part of the creel surveys, encounter rate information was collected for legal and sub-legal chinook and for legal and sub-legal coho size categories.

All of Georgia Strait was open for coho mark only retention in 2003 where hatchery coho catch was up by 56% and releases of wild coho down by 50%. The most significant increase was in the Capilano area. In Juan de Fuca Strait, the SMF expanded in time from August 1 in 2002 to July 1 in 2003, and both catch of hatchery coho and releases of wild coho increased substantially over 2002 levels, 221% increase for retained hatchery coho and 98% increase in released wild coho.

Overall encounter rate for coho in Georgia Strait was more than in 2002 (32% increase), with the majority recorded in the Victoria area. The proportion of marked coho kept to total kept and released (the mark rate) averaged 28% using creel survey information over all areas in Georgia Strait (which likely is a minimum estimate).

For terminal fishing areas, catch and effort in Porpoise Bay (Area 16-1) was similar with previous years, except that the run was later and for a shorter time period. In previous years, the coho would arrive as early as June and continue through to September, but were only seen for a few weeks during 2003. In Davis Bay (Area 29), the same condition was observed as in Porpoise Bay – the run was later and for a shorter period in comparison with previous years. The coho arrived about three weeks later, and quickly went up Chapman Creek with the large surge of water during the start of October. The effort and catch for 2003 was good considering the reduced opportunity available for angling; overall the catch and effort was down by about 30% compared with last year. The mark rate for coho in Porpoise Bay and Davis Bay was approximately 80% and 50% respectively.

The number of participants in the guide logbook program decreased slightly (by 8%) from last year. Approximately 87% of the guides that were asked to participate in the program initially agreed to provide data, but only a fraction of the lodge and guided effort was documented and provided to the Department. The reported catch in the guided logbooks was less than 1% of the total estimated catch of chinook and coho. The Tofino area had the lowest participation level at 14%, while Duncan had the highest (100% of guides approached for the project participated). Interviews with guides indicate a variety of reasons for lack of participation.

Table 16. 2003 estimated coho catch (kept), release, and total mortalities (kept plus release mortality).

Area			Survey Dates	Effort (Boat trips)	Legal Size					Sub-legal Size	
					Hatchery		Wild			Hatchery	Wild
					Kept	Release	Kept	Release	Total Mortality	Release	Release
Marine	GS	13	Apr 1 - Oct 31	31,562	819	183	44	6,925	737	19	826
Marine	GS	14	Apr 1 - Oct 31	18,276	107	12	6	1,272	133	188	431
Marine	GS	15	Apr 1 - Oct 31	4,380	-	-	-	37	4	-	15
Marine	GS	16	Apr 1 - Oct 31	13,532	-	-	-	87	9	-	364
Marine	GS	17	Apr 1 - Oct 31	16,744	30	-	-	354	35	208	309
Marine	GS	18	Apr 1 - Oct 31	9,674	32	-	-	298	30	-	120
Marine	GS	19	Apr 1 - Oct 31	1,789	-	-	4	-	4	-	-
Marine	GS	28	Apr 1 - Oct 31	20,828	7,024	2,332	185	185	204	1,979	1,084
Marine	GS	29	Apr 1 - Oct 31	7,361	44	43	1	-	1	20	26
		Total		**124,146**	**8,056**	**2,570**	**240**	**9,158**	**1,157**	**2,414**	**3,175**
Terminal	GS	Terminal	Jul 1 - Sep 30	3,148	177	102	91	177	109	3	16
		Total		**3,148**	**177**	**102**	**91**	**177**	**109**	**3**	**16**
Marine	JDF	19	Apr 1 - Oct 31	10,114	582	32	109	3,145	424	114	141
Marine	JDF	20	Apr 1 - Oct 31	42,443	8,966	432	2,544	24,872	5,031	1,172	6,204
		Total		**52,557**	**9,548**	**464**	**2,653**	**28,017**	**5,455**	**1,286**	**6,345**
Marine	JST	12	Jul 1- Aug 30	13,826	2,039	1,473	338	7,973	1,135	231	6,228
		Total		**13,826**	**2,039**	**1,473**	**338**	**7,973**	**1,135**	**231**	**6,228**
Marine	WCVI	121	Jun 1 - Sep 30	1,574	3,718	-	-	1,126	113	-	605
Marine	WCVI	123	Jun 1 - Sep 30	6,280	2,411	120	459	7,776	1,237	511	473
Marine	WCVI	124	Jun 1 - Sep 30	651	78	9	78	296	108	17	131
Marine	WCVI	125	Jun 1 - Sep 30	186							
Marine	WCVI	21	Jun 1 - Sep 30	638							
Marine	WCVI	23	Jun 1 - Sep 30	52,620	16,341	900	16,377	8,483	17,225	175	1,722
Marine	WCVI	24	Jun 1 - Sep 30	3,631	745	121	2,851	2,650	3,116	7	234
Marine	WCVI	25	Jun 1 - Sep 30	11,655	1,613	638	5,965	12,042	7,169	-	1,174
Marine	WCVI	26	Jun 1 - Sep 30	1,977	7	-	35	-	35	-	-
Marine	WCVI	27	Jul 1- Aug 30	2,133	254	115	4,588	9,979	5,586	-	55
		Total		**81,345**	**25,167**	**1,903**	**30,353**	**42,352**	**34,589**	**710**	**4,394**
		All Total		**275,022**	**44,987**	**6,512**	**33,675**	**87,677**	**42,445**	**4,644**	**20,158**

Terminal Fishing Areas

Along the WCVI terminal fishing areas where retention of wild "unmarked" coho was permitted included portions of Port San Juan (Area 20), Alberni Inlet and portions of Barkley Sound (Area 23), portions of Clayoquot Sound (Area 24), portions of Nootka Sound and Esperenza Inlet (Area 25), portions of Quatsino Sound (Area 27). In areas 23, 24, 25 and 27, retention of wild "unmarked" coho was permitted after June 1. Otherwise retention of wild "unmarked" coho was permitted after July 1. In most areas these regulations were in effect until December 31. Rivers with large hatcheries including the Stamp/Somass, Nitinat, and Conuma were permitted sport retention of wild and hatchery coho after September 3 through December 31. For the Stamp/Somass monitoring was conducted from October 17 until November 11. The fishery effort and monitoring was delayed in 2003 due to access restrictions caused by long periods with no precipitation and warm weather prevented anglers from accessing the river.

Table 17. West coast Vancouver Island terminal hatchery mark selective coho fisheries.

WCVI Terminal Area	Daily Limit (marked or unmarked)	Size Limit	Coho Season
portion of area 20 Renfrew	2 either	30 cm.	Aug 1 – Dec 31
Portion of area 23 Barkley	2 either	30 cm.	June 1 – Dec 31
Portion of area 23 Alberni Inlet	2 either changed to 4 either Aug 1	30 cm.	June 1 – Dec 31
Portion of area 24 Clayoquot	2 either	30 cm.	June 1 – Dec 31
Portion of area 25 Nootka / Esperanza	2 either	30 cm.	June 1 – Dec 31
Area 26 Kyuquot	0	30 cm.	closed
Portion of area 27 Quatsino	2 either	30 cm.	June 1 – Dec 31

In other areas, including the Strait of Georgia, extreme terminal closures were in effect in river mouths or local bays. River mouth / local bay closures were lifted in some areas where impacts on other species or stocks was not a concern. In some of these areas special management actions, including changes in daily bag limits or size limits, were implemented depending on the situation. Actions in these local areas included the following:

Table 18. Strait of Georgia/Fraser River terminal hatchery mark selective coho fisheries.

Strait of Georgia Terminal Fishing Area	Daily Limit (marked or unmarked)	Size Limit	Coho Season
Portion of Area 16: Sechelt Inlet and Porpoise Bay (South of 9 mile point)	4 marked	30 cm	Jun 1 to Dec 31
Portion of Area 16: Halfmoon Bay	2 marked	41 cm	Jun 1 to Dec 31
Portion of area 28: Howe Sound (28-1 to 28-5) and area 29 east of line from Gower Pt. to Tango 10 marker to northern tip of Lulu Island	2 marked	30 cm	All Year
Portion of area 28: 28-11 to 28-14 Burrard Inlet (Capilano River), Indian Arm and Port Moody Arm	2 marked	30 cm	Apr 1 to Sep 30
Portion of 29: Davis Bay and Trail Bay (inside 1/2 mile offshore)	2 marked	30 cm	Jun 1 to Dec 31

In the Strait of Georgia there were non-tidal openings for coho on the Big Qualicum River (October 16 to November 11, 2003) and Puntledge River (October 1 to November 14, 2003 -Stat. Area 14). The fisheries were monitored using a roving creel survey design combined with on-ground angler effort counts. Along the Big Qualicum and Puntledge Rivers, four coho were allowed to be retained, two of which could be over 35 cm. During 2003, the effort along the Big Qualicum River was reduced to about 75% of 2002, and the coho catch was down to about 60% of 2002. Catch of marked coho in the Big Qualicum River was estimated to be 1150 with releases of wild coho at 1950. During 2003, the angler effort was similar with that of 2002, but the coho catch was drastically lower (approximately 20% of 2002). Catch on the Puntledge River of marked coho was estimated to be 170 while releases of wild coho were just over 600. The reduced catch and effort along the Big Qualicum and Puntledge Rivers can be partially attributed to higher water levels (and very low water levels) on the rivers and fish entering the river later than usual.

Chapman Creek (Area 29-1) was monitored from October 7 to 29 during 2003, but due to high turbid water followed by low water levels, catch and effort were minimal for 2003. The estimated coho catch on Chapman Creek was approximately 300, with 115 coho retained.

Commercial Fisheries

Southern BC commercial fisheries were regulated so that impact on coho, and especially Thompson coho stocks, was minimized in 2003. There was mandatory non-retention of coho in all commercial fisheries with the exception of directed troll and gillnet coho fisheries in Alberni Inlet, and the permitted retention of coho bycatch in the Nootka Sound gillnet chum fishery. Monitoring included requirements for daily catch reporting, mandatory logbooks, hailing catches on a regular basis, independent on-board observers on vessels when requested. These fisheries and their estimates of coho encounters are briefly described below.

Table 19. Total coho encounters in 2003 commercial fisheries.

	License Area					**Total**
	B	D	E	G	H	
Total Coho-Kept	0	5,418	0	101	0	**5,519**
Total Coho-Released	8,980	4,505	483	11,836	3,972	**29,776**
Mortality Rates	25-30%	40%	40%	15%	15%	
Total Mortality	**2,279**	**7,220**	**194**	**1,877**	**597**	**12,167**

AREA B

All Area B Seine fisheries were not permitted to retain coho in 2003. The impacts from Area B seine fisheries on coho stocks are primarily from the bycatch and subsequent release mortalities from the Johnstone Strait fisheries.

Table 20 Estimates of coho encounters and mortalities for Area B seine fisheries in 2003.

Fishery	**Kept**	**Released**	**Mortality Rate**	**Total Mortality**
Johnstone Strait	0	8,207	25%	**2,052**
Juan de Fuca Strait	0	108	25%	**27**
Barkley Sound	0	4	25%	**1**
Nitinat	0	661	30%	**198**
Total	**0**	**8,980**		**7,220**

AREA D

Area D gillnet fisheries were permitted to retain coho in 2003. The impacts from Area D gillnet fisheries on coho stocks are from retention, as well as the release of bycatch and its subsequent mortality.

Table 21 Estimates of coho encounters and mortalities for Area D gillnet fisheries in 2003.

Fishery	**Kept**	**Released**	**Mortality Rate**	**Total Mortality**
Johnstone Strait	0	3,461	40%	**1,385**
Strait of Georgia	0	68	40%	**27**
Bute Inlet	0	740	40%	**296**
Barkley Sound	4,026	198	40%	**4,106**
Nootka Sound	1,392	38	40%	**1,407**
Total	**5,418**	**4,505**		**2,279**

AREA E

Area E gillnet fisheries not permitted to retain coho in 2003. The Impacts from Area B seine fisheries on coho stocks are primarily from the bycatch and subsequent release mortalities from each component fishery.

Table 22 Estimates of coho encounters and mortalities for Area E gillnet fisheries in 2003.

Fishery	Kept	Released	Mortality Rate	Total Mortality
Fraser River	0	0	40%	**0**
Nitinat	0	483	40%	**194**
Total	**0**	**483**		**194**

AREA G

Area G troll fisheries were permitted to retain coho bycatch in a targeted Somass chinook in Alberni Inlet. Area G troll fisheries were not permitted to retain coho in the WCVI chinook troll fishery, or the pink troll fishery. The impacts on coho stocks from Area G troll fisheries are primarily due to the bycatch in the WCVI chinook fishery and coho retention in the Somass chinook fishery.

Table 23 Estimates of coho encounters and mortalities for Area G troll fisheries in 2003.

Fishery	Kept	Released	Mortality Rate	Total Mortality
Barkley Sound	101	0	15%	**101**
WCVI Areas 23-27	0	11,836	15%	**1,776**
Total	**0**	**11,836**		**1,877**

AREA H

Area H troll fisheries were not permitted to retain coho in 2003. The impacts from Area H troll fisheries on coho stocks are primarily from the bycatch and subsequent release mortalities from the Johnstone Strait fisheries.

Table 24 Estimates of coho encounters and mortalities for Area G troll fisheries in 2003.

Fishery	Kept	Released	Mortality Rate	Total Mortality
Johnstone Strait	0	3,961	15%	**595**
WCVI Areas 23-27	0	11	15%	**2**
Total	**0**	**3,972**		**597**

Stock Status

Upper Fraser Coho Stocks

Field programs to estimate escapements are currently underway, and it is not possible to indicate many early trends as a major freshet wiped out some counting fences, and made many other streams difficult to work in. Near- final estimates will not be available until March; data entry and verification are not yet even underway for any systems. At this time, spawner levels appear to lower than the recent two years.

Preliminary escapement estimates are likely negatively biased due to prolonged icing conditions early in the season, and extended periods of low water that impacted countability, and entry into many of the tributary streams. Further, budget and weather concerns hampered aerial assessments of remote populations. Mark recapture estimates are still very preliminary, and estimates of survey life, crucial for AUC's are as yet undeveloped as they require near-final mark-recapture estimates to be completed in order to estimate survey life.

Lower Fraser Coho Stocks

The PST coho indicator stock for the lower Fraser River is the Salmon River (Langley), a low gradient urban stream. Combinations of fence/trap and mark-recapture (m-r) techniques are used to assess both smolt production and adult escapement in this system.

The preliminary number of smolts emigrating from the Salmon River system this past spring (2003), based on a fence census, was 28,600 (5-year average of 69,000). The smolt m-r estimate in 2003 was 88,000; a difference of 59,400 when compared to the fence census. These smolts are the brood of an estimated 3,100 females that returned and spawned in 2001; these smolts will return as 3-year-olds in 2004. Lower water levels have allowed us to maintain the fence throughout smolt migration for three of the past six years. The average difference between the smolt m-r estimate and the fence census for these three years is 44% (i.e. m-r estimate higher than census in all three years). Differential mortality associated with marking and predation on the marked group as they migrate from the mark application site to the recapture site are believed to be contributing factors to the observed difference. In addition, no estimate of pre-smolt emigration is derived for this coho stock. Consequently, caution is recommended when using smolt data as a predictor of subsequent adult returns.

At the time of this writing, only 800 coho adults have been counted through the fence. A significant rain event in October required the lowering of the fence to prevent fence damage. The number of adults that passed the fence site during this time is unknown. The fence has since been raised and is again operational. A m-r technique will now be utilized to provide an escapement estimate for this years return. Carcass recovery has only just begun and will continue into February 2004. Consequently, it is too early to provide a preliminary in-season adult escapement estimate for 2003.

In past years, a m-r project on the upper Pitt River and an extensive visual enumeration project (that conducted regular visual surveys on a network of coho producing streams around the lower Fraser area) were additional quantitative assessments used in the determination of stock status of lower Fraser coho. Current fiscal funding issues required the cancellation of these projects in 2003.

Strait of Georgia Coho Stocks

Part way through the coho spawning period, observed numbers in Area 14 are about 90% of the 1998-2002 five year mean. This is based on peak counts and a preliminary estimate at Black Creek. The preliminary estimate for Black Creek is 2,900, which is equal to the five year mean. It is slightly less than the expected escapement based on the brood year smolt run (89,000) and the forecast survival (4.3%). Counts in Area 17 are only averaging 8% of the five year mean but this partly reflects later timing. For example, further south yet, in Areas 18 and 19, we have only a few non-zero counts at this time. Counts on the mainland (Areas 15 and 16) are at about 60% of the four year mean (1999-2002). The Myrtle Creek fence (near Powell River) has to date about half of the average total run over the previous three years. The status of the Georgia Basin coho remains poor.

Fry in streams around the Strait (excluding Fraser River) were less abundant than in 2002 and about the same as in 2001. It was the 2001 fry that are returning as adults in 2003. Fry densities continued to be less in most mainland streams that we monitor compared to Vancouver Island populations.

The more abundant fry in 2002 did not carry through to more smolts this year in most monitored streams. Smolt estimates in five streams were about 2/3rds recent averages. One of the estimates was for the upper reaches of the Cowichan system. Two other streams near

Courtenay, including our wild indicator at Black Creek, were about 50% better than average. However, the 82,000 smolts at Black this year were the progeny of a record large escapement in 2001 of 12,100. Carrying capacity in the system was clearly exceeded – the escapement the year before was 1,100 but it produced more smolts (89,000 in 2002). We think this year's escapement is closer to the optimum. Loss of good freshwater habitat has been a serious long term effect at Black and throughout the range of coho. However, the primary reason for the poor status of these stocks in the last 10 years has been their poor survival at sea.

West Coast Vancouver Island Coho Stocks

There are fixed site counts in Area 23 at Stamp Falls and Carnation Creek and on Jansen Creek in Area 26. About 80% of the Stamp Falls coho are from releases by Robertson Creek Hatchery. The final estimated number of hatchery and wild coho at the counter will probably be 85,000 to 90,000, about the same as the brood year escapement in 2000. That escapement was second only to 2001 in the 16 year series. The escapement of the wild stock at Carnation Creek was the largest seen in the 33 year time series. Last year had the second largest escapement. The Jansen adult count is a new one but it appears to be large relative to the size of the system.

The relatively large escapements to the indicator stocks are not reflected so far in the in-season counts from other WCVI streams. These stocks are assessed primarily by swims and only peak counts up to early November are available at this time. These partial-season counts are similar to season-end peak counts since the large escapement year of 1998 and they are higher than counts made from 1995 to 1997. Although escapements in most streams are probably adequate, as measured by fry surveys, counts in the extensive survey have not increased overall since 1998, despite major reductions in fishing mortality. Area 24 streams may be an exception regarding the adequacy of escapements – fry densities have been low here in relation to the habitat up to this year. We could not measure fry densities in Area 24 this year. Where we measured fry densities elsewhere in 2003, they were slightly less than the previous two years, perhaps due to the dry summer. Smolt abundances in Cherry Creek (Port Alberni) and Carnation Creek showed inconsistent trends: compared to the 1998-2002 five year mean, smolts were about half as abundant and 20% more abundant respectively.

Overall, the status of WCVI coho as indicated by fry, smolts and adults was good in 2003. Early to mid-season escapements are generally good. We have some concerns regarding escapements in Clayoquot Sound. And improved escapements at our major wild indicator, Carnation Creek, and the hatchery/wild indicator at Somass are not being mirrored by estimates in the extensive swim surveys elsewhere in Area 23 and other WCVI Areas. No downward trends are apparent over the region that would suggest a conservation concern. Fry densities in August and September were generally healthy throughout this region.

Johnstone Strait and Mainland Inlet Coho Stocks

The coho PST indicator stream for the Johnstone Strait mainland inlets is Heydon Creek (Loughborough Inlet). By early November the total count for coho was greater then that of 2002, above the average returns recorded since 1998. With the implementation of a stable fence structure in the Heydon system in 2001, assessment of coho escapement has improved over the previous three years of the program. Continued procedural improvements to establish escapement techniques on this system will allow us to assess coho stock status with greater accuracy.

The Johnstone Strait coho stock status indicator the Keogh River showed a significant decline in escapement this year, indicating low marine survival in comparison to the past few years. The low escapement value in 2003 does not reflect the brood year escapement and consequently the above average coho smolt output the brood year fish produced. The Keogh River in 2003 seems to be on par with other ECVI coho stocks which exhibited below average coho returns.

Southern Chum

Johnstone Strait

This year constituted the 2nd year of the exploitation rate strategy for Study Area Chum in Johnstone Strait. In order to ensure sufficient escapement levels while providing more stabilization of the fisheries a 20% fixed exploitation rate strategy was implemented independent of run size. A preseason planning model was utilized to layout the fishing plan based on expectation of effort and exploitation levels by gear group. Fisheries were conducted based on allocation of the 20% across the user groups of which 15% was allocated to the commercial gear groups. The additional 5% was set aside to satisfy FSC, recreational, test fish, U.S Commercial requirements and provide a buffer to the commercial exploitation. Past tagging studies conducted in 2000 and 2001 helped in the development of this strategy in assessing the exploitation rate and migration timing of chum stocks in the Straits.

In-season information is still being collected and analyzed in regards to the final harvest rate estimation.

First Nations

There was an estimated 13,000 chum harvested by First Nations in the Johnstone Strait area this year, catch estimate is still preliminary.

Marine Sport

The recreational catch in Johnstone Strait is estimated at 165 chum. Note that the creel survey in Area 13 to the end of October estimated a catch 5145 chum, but this is traditionally reported as Strait of Georgia catch. The majority of the catch and effort was in lower Area 13 during October and early November. Estimated chum catch for Area 12 was 101 for the July and August period.

Non-tidal sport

There were no directed chum fisheries in non-tidal waters in the Johnstone Strait area.

Commercial

Johnstone Strait study area chum fisheries for commercial seine, gillnet and troll were conducted between October 1 and November 1. The catch results as follow:

Three seine fishery openings were conducted, the first on Oct 6 (12 hrs) and the second on Oct 20 (10 hrs) and the third on Oct 21 (5 hrs) estimated total catch 731,036 chum.

Five gillnet fishery openings (11 fishing days) were conducted between Oct 2 and Nov 1, estimated total catch – 215,243 chum

Four troll fishery openings (17 fishing days) were conducted between Oct 1 and Oct 24, estimated total catch – 79,750 chum

The total commercial fishery study area chum catch (including 3,700 Area B selective fishery catch) from the Johnstone Strait is 1,026,029.

Johnstone Strait (Areas 12 and 13)

Fishery Date	Gear type	Effort	Catch
Oct 01 – Oct 05 (5 days)	H - TR	48	29,050
16:00 Oct 2 - 09:00 Oct 4 (41 hrs)	D - GN	78	32,400
Oct 6 06:00 – 18:00 hrs (12 hrs)	B - SN	118	261,000
Oct 8 – 10 (3 days)	H - TR	34	16,850
16:00 Oct 9 - 09:00 Oct 11 (41 hrs)	D - GN	85	43,300
SN selective Oct 11 - 13	B - SN	1	3,700
Oct 14 and Oct 19 (6 days)	H - TR	30	22,650
16:00 Oct 16 - 09:00 Oct 19 (65 hrs)	D - GN	62	48,000
Oct 20 08:00 – 18:00 hrs (10 hrs)	B - SN	99	203,000
Oct 20 08:00 – 13:00 hrs (5 hrs)	B - SN	99	228,500
Oct 22 and Oct 24 (2 days)	H - TR	22	11,200
16:00 Oct 23 - 09:00 Oct 25 (41 hrs)	D - GN	38	48,800
16:00 Oct 30 - 09:00 Nov 01 (41 hrs)	D - GN	24	36,500
Bute Inlet Sept 20 – 26 (96 hrs in 2 openings)	D - GN	29	18,100
Bute Inlet Sept 22 – 23 (2 days)	H - TR	4	12

	Total Catch	% of catch	J.S. Allocation Plan
Area B	731,036	71.2	77% (82% of net share)
Area D	215,243	21.0	17% (18% of net share)
Area H	79,750	7.8	6% (of total commercial)
Total Catch:	1,026,029		

Stock Status

The preseason expectation for Study Area Chums suggested below average returns to the area. The main component to the returns was expected to be the Fraser River stocks, whereas the Non-Fraser component was originating from a weak 1999 brood.

Test fishing commenced on September 15 and was terminated on November 5th. There appeared to be a good abundance of study area chum this year based on test fishing, fishery catches and escapement estimates. Preliminary information on escapements to date lend themselves to improved marine survival for the Inside Study Area stocks. In-season information is still being collected and analyzed in regards to total stock size.

Terminal returns: at this point we are still too early to assess the escapement to the Nimpkish River. Summer run chum escapements in Bute Inlet (Orford River) showed an improvement over the past few years and a directed terminal gillnet fishery was initiated to harvest the identified surplus.

Fraser River Chum

The escapement objective for Fraser River chum is 800,000. Required protection for co-migrating stocks of concern delays fisheries from the peak of the run (mid-October) to the end of the run (late October – early November) although the return has been above the escapement objective for a number of years. Small numbers of short fishery openings have prevented adverse impacts on local chum populations.

Fisheries

Fraser River chum are harvested in Johnstone Strait as well as in the Fraser River. Johnstone Strait fisheries are covered in the following section.

Chum fisheries are severely limited by conservation concerns for Upper Fraser (including Thompson River) coho and Interior Fraser steelhead. The lower Fraser River was closed from September 3 – October 8 below Mission (September 8 – October 10 between Mission and Hope) to all but selective gear to protect upper Fraser coho. Commercial gill net fisheries are further restricted to the end of October to protect Interior Fraser steelhead. The single most difficult issue the Fraser chum fishery faces is the ongoing problem of conserving small populations of co-migrating Interior Fraser steelhead.

First Nations

First Nations food, social and ceremonial (FSC) fisheries commenced October 11 following the end (97.5%) of the Interior Fraser coho migration. The estimated catch from all fisheries below Sawmill Creek to November 2 is 30,000. ESSR harvests have not yet been reported.

Recreational

Catch in the main stem Fraser recreational fishery which began on October 9 totaled 509 to October 31.

Commercial

Chum test fishing began on September 1 and was conducted on alternate days (alternates with chinook test fishing) until October 27 when chinook test fishing was completed; chum test fishing then continued on a daily basis. Chum catches in the 6.75" chum test net to November 12 total 6865.

Three Area E (commercial gill net) fisheries took place within specified portions of Area 29 on October 27, November 3 and November 10 with estimated catches of 24,000, 17,000 and 5,000, respectively.

Stock Status

Total Fraser River chum run size is estimated in-season using Albion test fishing catches and a Bayesian model. A run size of 1.6 million was calculated with Albion catch data to November 12. Very low catches resulting from a severe rainstorm event during the peak of the return has likely influenced the output from the model. No other escapement estimates for the 2003 return are currently available.

In general the overall status of Fraser River chum is uncertain. While there have been substantial returns in recent years (e.g. 1998) the timing of the run appears to be truncated compared to historical run distribution. Chum used to return to the Fraser River and its tributaries well into December. The run is now essentially over by early November. Whether this is a result of fishing practices, habitat changes to the spawning area that were used by late returning fish (e.g. mainstem spawning areas) or some other currently unidentified factor has yet to be determined. The lack of stock status information is hampering management of the chum fishery. Escapement estimates are based on enumeration of a very few large enhanced systems and even this minimal effort is being impacted by fiscal constraints. The status of small systems and different timing groups needs to be resolved.

Strait of Georgia Chum

The Strait of Georgia chum fisheries consists of terminal opportunities for chums returning to their spawning streams. Many of the potential terminal fishing areas have enhancement facilities and / or spawning channels associated with the rivers. Terminal fishery strategy consists of monitoring and assessing stocks (escapement and returning abundances) with the objective of insuring adequate escapement and providing harvest opportunities where possible. Assessing stocks may include test fisheries, commercial assessment fisheries, escapement enumeration and over flights. In some areas where stocks receive considerable enhancement (Qualicum) or where stocks have above average productivity, limited fishing may occur prior to major escapement occurring.

Qualicum area, having three major enhancement facilities (Big Qualicum, Little Qualicum and Puntledge hatcheries), has a specific harvest strategy, implemented since 1981. The strategy consists of limited early harvesting prior to escapement occurring. The early harvest total allowable catch (TAC) ceiling is 65% of the total surplus. This allows for a buffer to safeguard against forecast / stock abundance error. This buffer is limited to 100k, at which the additional surplus after 100k buffer can be considered early harvest TAC. The harvesting of early (brighter) fish includes conservation considerations to minimizing other species bycatch and minimizing the harvest of non-target passing chum stocks.

Other factors affecting the scheduling of commercial fisheries include coast-wide allocation, fishery impacts, gear interaction, effort and weather.

Recreational marine catches for chum salmon are generally small. Occasionally recreational in-river fisheries occur where surpluses or target escapements will be met. These fisheries are almost exclusively where enhancement facilities are present.

Fisheries

The terminal Strait of Georgia fisheries are managed on a stock by stock basis. Each area receives individual assessments according to the characteristics of the potential harvesting. Assessment and harvesting may begin as early as October and continue to as late as December. Information is preliminary and current to November 14th and potential fishing opportunities may still occur in the terminal areas.

First Nations

First Nation catches for food social and ceremonial purposes (FSC) are currently still being compiled. The Cowichan First Nation band has harvested approximately 25,000 and the Saanich group has harvested 2,000 chum to date. Fisheries under ESSR permits may occur in several areas. In the past, Qualicum area hatcheries provided ESSR to local bands. Additional ESSR have occurred in Goldstream and Cowichan but to date no fishing has occurred there. First Nations fisheries under section 35 remain a priority and occur in terminal areas based on a maximum harvest level. Additional fisheries may occur under ESSR policy guidelines, where surplus chum occur, in the past primarily in Nitinat Lake.

Recreational

Recreational creel survey extends to the marine area Discovery Passage (outside of Campbell River). This area was originally an extension of the Strait of Georgia creel survey and is traditionally reported with the Strait of Georgia catch. The total catch estimated by the creel survey and reported as Strait of Georgia catch retained is 5,145. The majority of chum catch occurs in the Discovery Passage area.

During the terminal fishery on the Puntledge River (Area 14), anglers were allowed to keep two chum per day. The river was open from October 1 to November 30 and was monitored until November 14, 2003. The numbers of chum coming through the river were very good and the estimated catch for chum was just over 4000, with only 15% total of the catch retained. Most of the chum encountered on the Puntledge River are caught indirectly as most of the angler effort is directed towards coho. Compared with 2002, the angler effort and the chum encountered were similar, with most of the chum caught indirectly with the coho fishery.

Commercial

Preseason expectations in general suggest surpluses for Qualicum area and Nanaimo and Goldstream rivers. Assessments and in-season management commences in mid-October.

Fisheries in Area 14 - Qualicum occurred with gillnet starting October 13-15, 20-24, 27-30 and November 3-6. Gillnet catches totaled approximately 47,862. Troll fisheries occurred on October 13-15, 20-24, and Oct 27 until further notice. Troll catches are estimated to total 739. No seine fisheries have occurred to date.

A gillnet fishery occurred in Nanaimo area on November 2-6 which resulted in a catch of 2,300 chum. In addition a troll fishery occurred on the same dates which resulted in no observed effort.

Commercial fisheries in Area 16 (Jervis), 18 (Cowichan) and 19 (Goldstream) have not occurred to date

Stock Status

The returning chum stock to the Strait of Georgia for 2002 was forecasted to be average to below average. Fisheries for First Nations were anticipated and occurred in most areas and for commercial and recreational, in Qualicum, Nanaimo, and Goldstream. The 1999 brood year was low to moderate in escapement levels, thus providing a varying forecast for individual areas. In general, chum survival has been average to above average and current chum escapements to many smaller streams have been encouraging. Note, at this time escapement monitoring is still continuing.

West Coast Vancouver Island Chum

The West Coast of Vancouver Island (WCVI) chum fisheries consists of terminal opportunities for chums returning to their spawning streams. The main potential terminal fishing (Nitinat and Nootka) areas have enhancement facilities associated with the rivers. Terminal fishery strategy consists of monitoring and assessing stocks (escapement and returning abundances) with the objective of insuring adequate escapement and providing harvest opportunities where possible. Assessing stocks may include test fisheries, commercial assessment fisheries, escapement enumeration, and over flights. In outer Nootka Sound where there is a mixture of wild and enhanced stocks, a harvest rate fishery occurs. The harvest rate target is 20 - 30% of the wild stock. In addition fisheries may occur on terminal surpluses adjacent to the enhanced systems in Tlupana Inlet. In Nitinat the harvest is dependent on forecasted and in-season assessed returning stocks.

Another objective is to minimize the by catch of concerned species, such as chinook, coho, and steelhead. Since 1995, the bycatch concerns have been addressed by delayed opening dates, reduced fishing area, increased use of weed lines, and selective fishing techniques. In 2003, concerns for bycatch of coho and steelhead were again an important factor in determination of the fishing opportunities in the Nitinat area. However, in Nootka Sound coho retention incidental to the chum gill net fishery was permitted due to recent year abundant returns.

First Nations fisheries under section 35 remain a priority and occur in terminal areas based on maximum harvest levels. Additional fisheries may occur under ESSR policy guidelines, where surplus chum occur, in the past primarily in Nitinat Lake.

Recreational marine catches for chum salmon are generally small. Occasionally recreational in-river fisheries may occur where surpluses or target escapements have been met, particularly in the Nitinat and Conuma rivers.

Fisheries

The primary fishery which harvests chum is the commercial sector. Of the commercial sector gillnet and seine are the main harvesters in Nitinat and gill net in Nootka. First Nation fisheries (section 35) remain a priority and generally occur in terminal areas (i.e. Nitinat Lake). Effort and catch are usually relatively low. In-river recreational fisheries are not wide spread, but have recently occurred annually in terminal area rivers (i.e. Nitinat River). Other recreational marine fisheries are generally low in effort for chum. In recent years a scientific license has been issued in Nitinat Lake to provide information on returning chum stocks. Information is preliminary and continues to be compiled for several fisheries.

First Nations

The FSC fishery in Nitinat Lake operated in conjunction with a scientific license. Approximately 800 chums were taken for FSC. First Nation (section 35) chum catch continues to be compiled; however, the annual amount is generally small.

A scientific licence was issued to the Ditidaht to harvest up to 2,000 chinook, 2,000 coho and 10,000 chums in 2003. The purposes of these activities was to provide information on migration timing and abundance, to collect unbiased biological samples and to continue to develop methods to selectively harvest targeted surpluses of chinook, chum and marked coho for food, social and ceremonial purposes and potential ESSR surpluses. A total of 2,082 chinook, 121 coho and 10,507 chums were caught.

Recreational

WCVI Chum were open all year with a limit of four (4) per day. There is a minimum size limit of >30cm. NWVI anglers kept 121 chum and SWVI anglers kept 630 chum between June 1 and September 30 during the 2003 sport fishery.

The Nitinat River opened August 25 until Dec 31 for the retention of chum, chinook, and coho salmon with a daily aggregate of four salmon of which two may be chum, chinook or coho. There was a two week closure to all salmon fishing from October 01 until October 14 to coincide with the peak chinook salmon spawning on the Nitinat. The river reopened to fishing October 15. The chum recreational fishery on the Nitinat River occurs primarily after the river reopened on the October 15. Fishing effort was restricted by heavy rainfall and river conditions from October 15 until October 22. It is estimated that total catch for Nitinat Lake and river is approximately 1,000 to 2000 chum. There are no other recreational opportunities for chum salmon in non tidal waters on the west coast of Vancouver Island.

Commercial

Nitinat

Gill nets opened for 2-12 hour days on September 29/30 inside the 1 mile boundary between Pachena Point and Dare Point. Additional 12 hour days followed on October 1 and 2. Gill nets reopened for 35 hours on October 6 and were subsequently extended until 1800 Saturday October 18. On October 16 the boundary was extended to 2 miles true south of Pachena and Bonilla Points. Gill net catch through October 18 for 17 days open prior to the first seine opening was estimated to be 156,000.

Seines opened for 34 hours from 0800 Sunday, October 19 inside the 2 mile boundary between Pachena and Bonilla Points, and were then extended until further notice. Gill nets reopened until further notice at 0800 October 21 in the same area as seines plus the gill net only area down to Logan Creek. Seines and gill nets both closed at 1700 October 29 due to concern that escapement targets may not be met. Poor weather in mid-October reduced fishing opportunities. Preliminary catch estimates are 193,000 gill net and 264,000 seine, total 457,000.

Seine assessment vessel payment catches totalled approximately12,000 chum salmon.

Nootka / Tlupana

Gill nets opened for 10.5 hours in Outer Nootka on September 23 with a modified boundary closing off the southern shore of the approach to Muchalat Inlet. Due to the small fleet size there was a second day on the 24th with the same boundary. The following week there were 2-10.5 hour fisheries in Outer Nootka on September 29 and 30 followed by 1-10.5 hour opening on October 1 in Tlupana Inlet. Outer Nootka then opened for 1-10.5 hour day on October 6 with the Muchalat approach boundary changed back to the Sub-area boundary. There was a second day in Outer Nootka on the 7th followed by 1 day in Tlupana on the 8th. On October 14 Outer Nootka opened for 10.5 hours followed by a second day on the 15th. A 10.5 hour opening in Tlupana Inlet on October 16th was followed by 1 more day on the 17th. On October 20 a scheduled 10 hour fishery in Outer Nootka was changed to Tlupana Inlet due to stormy weather. This was followed by a second day in Tlupana (21st) and then one day in Outer Nootka (22nd). In the last week of fishing there were a 10 hour day followed by a 9.5 hour day on October 27 and 28 in Outer Nootka. No additional fishing was allowed as it became apparent that the Conuma Hatchery was going to be short on several of its egg targets. The preliminary in-season chum catch estimate is 105,964.

Coho retention was permitted in Area 25 gill net chum fisheries this year with an estimated catch of 1,392.

Seine assessment payment catch total 23,647 chum and gillnet test catch was less than 100 chum.

Stock Status

Nitinat total returns for 2003 are forecasted to be 1.23 million chum. The main brood year production was 24 million eggs. The Nitinat area brood escapement was 126,000 spawners. Historical escapement have been variable; however, the returns are heavily subsidized by hatchery production. Gill net test fishing commenced on October 1st in Nitinat Lake and ending in November. Seine test fishing commenced October 4th and ended on October 28th. Current escapements for 2003 are 200,000 to the Nitinat River which has an escapement target of 175,000. Commercial fisheries have closed for the balance of the 2003 season. Stock assessment (primarily escapement enumeration) is currently continuing.

The total return to Nootka (Area 25) is forecasted at 286,000 which provide a surplus of 74,000 after escapement (212,000). Nootka Sound stocks are augmented by the Conuma hatchery, which produce both chum and chinook. The approximate 20% harvest strategy which was initiated in the early 1990's is currently under review. Escapement to individual streams is highly variable. The long term escapement trend (since the mid 1950's) suggests the wild stocks are stable. The escapement trend for the enhanced area streams suggest a slight increase over a more recent hatchery period (1978). Test fishing by seine commenced on September 29th and by gill net on September 17th and both continued (gill net intermittently) until the end of October. This years escapement (2003), are currently still receiving escapement monitoring.

Other returns to non-enhanced systems continued to be monitored. Early indications with several river systems in Area 23 and 24 currently show favourable returns

TABLE 25. PRELIMINARY 1993 TO 2003 CATCHES IN CANADIAN TREATY LIMIT FISHERIES.

Preliminary 1993 to 2003 Catches in Canadian Treaty Limit Fisheries

Fisheries/Stocks	Species	2003	2002#	2001	2000	1999	1998	1997	1996	1995	1994	1993	1992	1991
Stikine River (all gears)	*Sockeye*	58784	17,294	25,600	27,468	38,055	43,803	65,559	74,281	53,467	45,095	47,197	26,284	22,763
	Coho	190	82	233	301	181	726	401	1,404	3,418	3,381	2,616	1,855	2,648
	Chinook-large	1396	1,362	1,480	3,086	2,916	2,164	4,483	2,471	1,646	1,790	1,803	1,840	1,511
	Chinook-jack	1052	578	103	628	1,264	423	286	421	860	350	308	239	660
Taku River (commercial gillnet)	*Sockeye*	32,730	31,053	47,660	28,009	20,681	19,038	24,003	41,665	32,640	28,762	33,217	29,472	25,067
	Coho	3,168	3,082	2,568	4,395	4,416	5,090	2,594	5,028	13,629	14,531	3,033	4,077	3,415
	Chinook-large	1,894	1,561	1,458	1,576	908	1,107	2,731	3,331	1,577	2,065	1,619	1,445	1,177
	Chinook-jack	547	291	118	87	257	227	84	144	298	235	171	147	432
Areas 3 (1-4) (commercial net)*	*Pink*	667,103	876,631	473,318	127,000	2,162,280	61,000	329,000	987,000	2,613,000	262,000	1,242,000	1,099,000	6,961,000
Area 1 (commercial troll)	*Pink*	98,347	41,418	175,000	28,295	25,000	0	261,000	732,000	1,284,000	220,000	890,000	760,000	1,647,000
*North Coast** (troll + sport)*	*Chinook*	191,657 137357+54300	141,848 94748+47100	43,500	32,048	70,701	144,650	145,568	26,900	119,100	241,000	258,300	262,000	303,200
West Coast Vancouver Island (troll + sport)	*Chinook*	175,821 151826+23995	22,009 128,798	36,474 54,770	37,200 63,400	31,100 6,500	10,284	51,400	0	81,000	146,000	275,000	345,500	202,900
Fraser River (Canadian commercial catch)	*Sockeye*	1,042,986	2,182,700	295,000	953,000	54,000	1,295,000	8,737,000	1,019,000	903,000	9,800,000	13,428,000	3,906,000	6,947,000
	Pink	1149189	0	579,000		3,000	0	3,660,000	0	3,777,000	0	3,731,000	0	6,405,000
Fraser River Stocks (US commercial catch)	*Sockeye*	244000	434,600	240,000	494,000	41,000	707,000	1,578,000	257,000	415,000	2,100,000	2,876,000	700,000	1,881,000
	Pink	773000	0	427,000		3,000	0	1,565,000	0	1,919,000	0	1,725,000	0	2,789,000
West Coast Vancouver Island (commercial troll)	*Coho*	0	0	0	0	0	0	0	761,000	1,345,000	1,251,000	954,000	1,664,000	1,890,000
*Johnstone Strait (clockwork catch)****	*Chum*	1,026,029	700,000	236,000	161,000	41,411	1,820,000	104,593	101,971	269,000	1,295,600	1,271,700	1,368,283	174,269

2003 CATCHES ARE PRELIMINARY AND ARE BASED ON IN-SEASON HAILS, ON-THE-GROUNDS COUNTS, DOCKSIDE TALLIES AND ABORIGINAL LANDING SLIPS, FISH SLIP DATA CREEL SURVEYS AND LOGBOOKS

* AREA 5-11 CATCHES INCLUDED PRIOR TO 1995 AND EXCLUDED FROM 1996 TO 1998 INCLUSIVE. NOT PART OF 1999 ANNEX IV PROVISIONS.

** NORTH COAST CATCH EXCLUDES TERMINAL EXCLUSION CATCHES OF 6,000 ('91), 6,100 ('92), 7,400 ('93), 6,400 ('94), 1,702 ('95), 16,000 ('96), 5,943 ('97), and 2,182 in 1998. NO TERMINAL EXCLUSION IN THE 1999 AGREEMENT - COVERED UNDER THE AABM ARRANGEMENT. CENTRAL COAST AREAS NOT PART OF 1999 ANNEX IV PROVISIONS

*** CANADIAN CLOCKWORK CATCH INCLUDES COMMERCIAL, IFF AND TEST FISH CATCHES IN AREAS 11-13 FOR1991-94 INCLUSIVE, AND IN AREAS 12-13 FOR 1995 TO 2003 INCLUSIVE

NOTE: BOLD LINE BETWEEN 1998 AND 1999 INDICATES THAT 1999 CATCHES ARE REPORTED ACCORDING TO FISHERIES/STOCKS UNDER THE 1999 ANNEX IV PROVISIONS

C. 2003 POST-SEASON REPORT FOR UNITED STATES SALMON FISHERIES OF RELEVANCE TO THE PACIFIC SALMON COMMISSION

Northern Boundary Area Fisheries

District 104 Purse Seine Fishery

The June 30, 1999 revision of the Pacific Salmon Treaty (PST) Agreement calls for the implementation of abundance based management in the District 104 purse seine fishery. The agreement allows the District 104 purse seine fishery to harvest 2.45 percent of the Annual Allowable Harvest (AAH) of Nass and Skeena sockeye prior to statistical week 31. The AAH is calculated as the total run of Nass and Skeena sockeye salmon minus either the escapement requirement of 1.1 million (200,000 Nass and 900,000 Skeena) or the actual inriver escapement, whichever is less.

The District 104 purse seine fishery opens the first Sunday in July; in 2003 the initial opening was July 6 (Week 28). The pre-Week 31 fishing plan for District 104 was based on the preseason forecast returns of 686,000 Nass and between 800,000 and 1.2 million Skeena sockeye salmon provided by the Canadian Department of Fisheries and Oceans (DFO). Management actions took into account an apparent "underage" of sockeye salmon from the 1999 through 2002 seasons.

In the 2003 treaty period 84,742 sockeye were harvested in: 1) the initial 10-hour opening in Week 28; 2) one 10-hour and two 6-hour openings in Week 29; and 3) two 6-hour and one 8-hour openings in Week 30 (Table 1). The number of purse seine vessels fishing ranged from 6 to 37 during the period covered by the Treaty. In past years 60% to 80% of these sockeye have been of Nass and Skeena origin. Thus, we would anticipate that between 50,800 and 67,794 Nass and Skeena sockeye were harvested in the District 104 purse seine fishery pre-Week 31. The final targeted number of Nass and Skeena sockeye will not be available until catch, escapement, and stock composition estimates are finalized for the year.

While other purse seine fisheries are not bound by the Treaty, the fleet moves freely between districts, so seining opportunities elsewhere can affect the catch and effort in District 104.

The average numbers of hours, boats, days, and boat-days fished pre-Week 31 in District 104 since the Pacific Salmon Treaty was signed in 1985 are down 57%, 48% and 78% respectively compared to the 1980-1984 period (Table 2). The pre-Week 31 Treaty-period sockeye harvest is also down 27% despite a 283% increase in the average sockeye catch-per-boat-day since 1984.

In 2003 the District 104 purse seine fishery harvested 6,521,143 pink salmon, 329,719 sockeye, 74,120 coho, 162,284 chum, and 13,261 chinook salmon. While the number of boats fishing in District 104 rose to 74 from a treaty-period low of 61 in 2002, this is still less than half the 1985-2002 average. The 2003 sockeye catches were 54%, coho catches were 49%, pink catches were 61% and chum catches were 41% of their respective 1985-2002 averages.

Table 1. Catch and Effort in the Alaska District 104 purse seine fishery by opening, 2003.

Week/ Opening	Start/ Date	Chinook	Sockeye	Coho	Pink	Chum	Boats	Hours
28	6-Jul	0	1,023	659	14,978	3,341	12	10
29	13-Jul	107	6,723	1,642	65,918	7,090	6	10
29B	16-Jul	279	5,901	1,863	99,054	5,024	17	6
29C	17-Jul	572	13,887	3,306	182,283	13,628	23	6
30	20-Jul	189	18,260	2,305	157,290	6,176	16	6
30B	21-Jul	161	15,577	2,380	275,928	4,903	18	6
30C	24-Jul	392	23,371	4,280	447,201	10,618	37	8
31	28-Jul	723	21,995	4,820	573,469	10,788	49	10
31B	29-Jul	420	18,433	3,047	368,656	5,432	36	10
31C	30-Jul	140	11,882	1,973	256,015	3,329	21	10
31D	31-Jul	478	15,931	4,944	389,300	7,450	33	10
31E	2-Aug	762	22,002	5,245	515,645	7,567	43	12
32	3-Aug	284	9,318	2,527	311,275	4,542	30	12
32B	4-Aug	588	16,118	2,969	339,007	5,748	25	12
32C	5-Aug	1,407	17,157	3,480	458,374	5,217	37	12
32D	7-Aug	571	12,751	3,776	316,483	5,687	37	12
32E	8-Aug	383	11,156	3,222	229,880	5,258	27	12
32F	9-Aug	83	8,340	1,364	150,786	2,431	13	12
33	10-Aug	326	8,442	2,506	185,375	3,406	20	12
33B	12-Aug	188	6,974	1,586	141,363	3,166	18	12
33C	13-Aug	376	5,261	2,174	182,367	3,297	18	12
33D	14-Aug	256	2,170	977	70,207	1,726	10	12
33E	15-Aug	72	1,135	621	69,217	2,040	6	12
34	17-Aug	521	9,050	1,849	115,246	4,360	12	12
34B	18-Aug	690	8,173	2,236	107,202	4,587	13	12
34C	19-Aug	860	4,075	1,057	55,730	3,715	9	12
34D	20-Aug	620	7,405	1,193	65,825	2,727	5	12
34E	22-Aug	913	17,108	3,619	209,009	9,823	16	39
35	24-Aug	740	7,763	2,006	130,284	5,836	17	39
35B	27-Aug	160	2,338	494	37,776	3,372	5	87
36	1-Sep	0	0	0	0	0	0	39
Total Weeks 28-30		1,700	84,742	16,435	1,242,652	50,780	40	52
Total Weeks 31-36		11,561	244,977	57,685	5,278,491	111,504	69	436
Total Season		13,261	329,719	74,120	6,521,143	162,284	74	488

Table 2. Fishing opportunity, effort, and sockeye harvests prior to Week 31 in the District 104 purse seine fishery, 1980 to 2003.

Year	Hours Fished	Boats Fished	Fraction Days Fished (1d=15hr)	Boat-Days Fished (Fraction Boats and Fraction Days)	Sockeye Harvest	Sockeye Catch/ Boat-Day
1980	207	244	13.8	2,877	266,273	93
1981	132	212	8.8	1,108	185,188	167
1982	117	255	7.8	1,435	213,150	149
1983	108	241	7.2	1,211	168,806	139
1984	132	174	8.8	805	103,319	128
1985	84	141	5.6	502	100,590	200
1986	108	194	7.2	968	91,320	94
1987	90	134	6	457	72,385	158
1988	108	210	7.2	994	248,789	250
1989	84	135	5.6	438	157,566	360
1990	42	171	2.8	276	169,943	615
1991	41	134	2.7	243	98,583	406
1992	29	108	1.9	142	79,643	561
1993	45	171	3	343	163,189	476
1994	55	84	3.7	202	158,524	783
1995	58	109	3.9	218	71,376	328
1996	31	113	2.1	128	215,144	1,684
1997	56	159	3.7	409	572,942	1,402
1998	32	78	2.1	89	17,394	196
1999	30	38	2	44	7,664	174
2000	81	66	5.4	192	48,969	255
2001	50	95	3.3	182	203,090	1,115
2002	72	44	4.8	124	26,554	215
2003	52	40	3.5	151	84,742	561
Avg. 80-84	139	225	9	1,487	187,347	135
Avg. 85-03	60	117	4	321	136,232	518
% Change	-57%	-48%	-57%	-78%	-27%	283%

District 101 Drift Gillnet Fishery

The June 30, 1999 PST agreement calls for abundance based management of the District 101 (Tree Point) drift gillnet fishery. The agreement specifies a harvest of 13.8 percent of the AAH of the Nass sockeye run. For the 2003 season, DFO forecast a total run of 686,000 Nass River sockeye salmon. The AAH is calculated as the total run of Nass sockeye salmon minus either the escapement requirement of 200 thousand or the actual inriver escapement, whichever is less.

The District 101 drift gillnet fishery opens by regulation on the third Sunday in June. During the early weeks of the fishery, management is based on the run strength of Alaska wild stock chum and sockeye salmon and on the strength of the Nass River sockeye salmon. Beginning in the third week of July, when pink salmon stocks begin to enter the fishery in large numbers, management emphasis shifts by regulation to that species. By regulation, the District 101 Pink Salmon Management Plan sets gillnet fishing time in this district in relation to the District 101 purse seine fishing time when both fleets are concurrently harvesting the same pink salmon stocks.
The District 101 gillnet fishery was initially opened Sunday June 15 (Week 25) for a 4-day fishery with weekly 4-day fisheries continuing through Week 29. Beginning July 20 (Week 30), with the implementation of the Pink Salmon Management Plan, the fishery was open for

5-day weeks through Week 35, which ended August 30. The fishery was open 4-days in Week 36, 4-days in Week 37, 5-days in Week 38, and 4-days in Week 38. Sockeye and chum salmon catches were generally below average throughout the season. Pink catches were well above average early in the season when catches are relatively low but fell below average beginning in early August when the bulk of the catch occurs. The coho catch was above average early in the season, fell slightly below average in late July, then rose to above average in late August. The cumulative sockeye harvest prior to the initiation of the Pink Salmon Management Plan in Week 30 was 84,225 fish, or about 80% of the season's total sockeye harvest.

During the period (Weeks 30-36) when the pink salmon management plan was in effect catches of pink, sockeye and chum salmon were generally below average.

Beginning on September 7 (Week 37) the fishery was managed on the strength of fall chum and coho returns which were generally below average in these weeks. The below average catches are more a reflection of the reduced effort at Tree Point in 2003 more than a resource problem.

A total of 105,263 sockeye salmon were harvested in the District 101 drift gillnet fishery in 2003 (Table 3). The sockeye harvest and number of boat-hours and boats fished was below the 1985-2002 average and the hours fished was above average. The number of boats fishing annually since the Treaty was signed has dropped from a high of 198 in 1986 to 71 in 2003. The final number of Nass River sockeye harvested at Tree Point will not be available until catch, escapement, and stock composition estimates are finalized for the 2003 season.

Table 3. Weekly catch and effort in the Alaska District 101 commercial drift gillnet fishery, 2002.

Week	Start Date	Chinook	Sockeye	Coho	Pink	Chum	Boats	Hours
25	15-Jun	69	7,256	455	239	9,320	46	96
26	22-Jun	251	33,845	790	19,810	15,622	57	96
27	29-Jun	168	15,981	2,295	71,494	21,289	62	96
28	6-Jul	73	10,186	1,663	65,038	21,538	53	96
29	13-Jul	34	4,479	1,850	53,452	23,975	44	96
30	20-Jul	43	12,478	3,840	90,614	35,609	39	120
31	27-Jul	12	5,741	1,504	84,061	22,553	38	120
32	3-Aug	14	5,629	1,957	77,390	10,417	36	120
33	10-Aug	7	4,076	1,673	51,373	4,768	32	120
34	17-Aug	2	2,749	4,630	56,590	12,171	26	120
35	24-Aug	2	1,757	4,992	27,902	6,813	23	120
36	31-Aug	2	657	8,088	20,490	17,010	24	96
37	7-Sep	0	355	11,717	2,850	19,439	25	96
38	14-Sep	0	72	15,178	67	20,219	25	120
39	21-Sep	0	2	2,987	2	5,521	13	96
Total		677	105,263	63,619	621,372	246,264	71[1]	1,608

[1] This is the total number of individual boats that fished in District 101 in 2003.

Table 4. Annual sockeye harvest in the Alaska District 101 drift gillnet fishery, 1985 to 2002, and comparison of sockeye harvest and effort (number of boats, hours, and boat-hours fished) between Statistical Weeks 26 and 35 when sockeye salmon are most abundant in this district.

	Annual	Catch and Effort Between Weeks 26 and 35			
	Sockeye	Sockeye			Boat-
Year	Harvest	Harvest	Boats	Hours	Hours
1985	173,100	159,021	153	1,032	157,865
1986	145,699	143,286	198	960	190,044
1987	107,503	106,638	170	615	104,519
1988	116,115	115,888	187	756	141,338
1989	144,936	130,024	176	1,023	180,016
1990	85,691	78,131	150	840	125,969
1991	131,492	123,508	130	984	127,920
1992	244,649	243,878	118	1,080	127,416
1993	394,098	390,299	148	1,032	152,733
1994	100,377	98,725	142	984	139,700
1995	164,294	151,131	128	1,008	129,024
1996	212,403	175,569	129	1,104	142,408
1997	169,474	152,662	128	1,008	129,024
1998	160,506	159,307	124	1,044	129,454
1999	160,028	158,268	118	1,032	121,776
2000	94,651	94,399	95	912	86,640
2001	80,041	62,129	73	1,020	74,445
2002	120,353	106,360	68	1,008	68,544
Average 1985-2002	155,856	147,179	135	969	129,380
2003	105,263	96,921	68	1,104	75,058

Escapements

The total pink salmon escapement index of 21.3 million ranked 3rd highest since 1960, and was well above the 1990s average of 15.8 million. Overall the index was very similar to the parent year escapement index of 19.2 million in 2001. The recently established biological escapement goals were exceeded for all three sub-regions of Southeast Alaska (Table 5). Escapement indices for all 45 pink salmon stock groups were within, or above, management targets, and 29 of 45 were above the 1990s average.

Table 5. Southeast Alaska pink salmon indices, and escapement goals (millions).

Sub-region	2003 Pink Salmon Index	Lower Escapement Goal	Upper Escapement Goal
Southern Southeast	10.8	4.0	9.0
Northern Southeast Inside	6.7	2.5	5.5
Northern Southeast Outside	3.8	0.75	1.75

Programs to estimate escapements of sockeye salmon were in place for nine systems in southern Southeast Alaska in 2003: Eek, Hetta, Hugh Smith, Luck, Klawock, McDonald, Salmon (Karta), Salmon Bay (N. Prince of Wales), and Thoms Lakes. All estimates at this time are preliminary.

The Hugh Smith Lake adult sockeye escapement was 19,568. This escapement exceeded the upper end of the recently established biological escapement goal range of 8,000 to 18,000 adult sockeye salmon.

The escapement of sockeye salmon into McDonald Lake was estimated to be 89,000 fish, based on the expanded foot survey index; just above the long-term average, and an increase over the past two years escapements of 43,000 (2001), and 26,000 (2002). Salmon Lake escapement was estimated at 7,000 sockeye salmon, based on an expanded foot survey index (below the average of 12 thousand). Klawock Lake had a preliminary weir count of 6,024 sockeye salmon through 3 November but the weir was not fish-tight. Mark-recapture estimates of the sockeye salmon escapements to Klawock, Hetta, Eek, and Salmon Bay lakes have not been completed at this time. Preliminary mark-recapture escapement estimates are over 10,000 sockeye to Thoms Lake and approximately 20,000 to Luck Lake.

Escapements of summer and fall run chum salmon appeared to be slightly below average – the index of peak survey estimates to 82 streams was 18% below the 1982-2002 average. Estimates of chum salmon for several streams in Portland Canal and Behm Canal were not obtained because the earlier than normal pink salmon run masked escapements of chum salmon there. The escapement of chum salmon into Fish Creek at the head of Portland Canal was estimated to be 39,000 based on expanded foot survey counts; this was well above the long-term average of 24,000 and continued a trend of improving chum salmon escapements there since 1997.

Transboundary Area Fisheries

Stikine River Area Fisheries

The 2003 harvest in the District 106 commercial gillnet fishery included 421 chinook, 116,904 sockeye, 212,057 coho, 470,697 pink, and 300,254 chum salmon (Table 6). District 106 catches of coho, pink, and chum salmon were well above the 1993-2002 average, while the 2003 catches of sockeye and chinook were below the 10 year average.

Lower catches can be partially attributed to low effort in the district. An estimated 44% of the coho salmon harvest was of Alaskan hatchery origin.

Table 6. Weekly salmon catch in the Alaskan District 106 commercial drift gillnet fisheries, 2002. Catches do not include Blind Slough terminal area harvests.

Week	Start Date	Chinook	Sockeye	Coho	Pink	Chum	Permits	Days	Boat Days
25	15-Jun	16	1,148	903	1,603	3,067	31	2	62
26	22-Jun	69	7,477	4,710	23,655	10,069	45	2	90
27	29-Jun	70	8,579	7,381	27,758	11,274	64	2	128
28	6-Jun	64	13,019	7,492	34,132	20,829	49	3	147
29	13-Jul	16	17,714	9,228	42,372	22,633	66	3	198
30	20-Jul	24	17,682	12,523	52,264	36,311	84	3	252
31	27-Jul	28	24,473	10,417	76,677	21,313	82	4	328
32	3-Aug	22	15,975	13,182	63,248	19,928	82	4	328
33	10-Aug	10	7,181	8,618	56,411	10,825	80	4	320
34	17-Aug	4	2,195	13,903	47,435	12,318	60	4	240
35	24-Aug	21	950	18,099	34,761	22,236	92	4	368
36	31-Aug	5	282	17,098	6,688	22,798	79	3	237
37	7-Sep	14	184	30,520	3,497	37,750	88	4	352
38	14-Sep	32	36	34,234	193	34,052	80	4	320
39	21-Sep	3	6	14,831	3	10,812	62	4	248
40	28-Sep	2	3	7,514	0	3,698	36	4	144
41	5-Oct	3	0	1,236	0	328	12	3	36
42	12-Oct	18	0	168	0	13	3	2	6
Total		421	116,904	212,057	470,697	300,254		59	3,804
1992-2003 Avg.		818	163,246	195,834	420,147	245,613		42	3,972
2003 % 10-yr Avg.		51%	72%	108%	112%	122%		139%	96%

In the District 108 fishery, 312 chinook, 42,158 sockeye, 38,795 coho, 76,113 pink, and 51,701 chum salmon were harvested (Table 7). District 108 was not opened until week 28 due to concerns related to Tahltan Lake sockeye salmon. Because the fishery was delayed, comparisons of 2003 chinook and sockeye salmon harvests to previous 10-year averages are of little value. An estimated 17% of the coho catch was of Alaskan hatchery origin.

Table 7. Weekly salmon catch and effort in the Alaskan District 108 commercial drift gillnet fishery, 2003. Catches do not include Ohmer Creek terminal area harvests. The permit days are not adjusted for boats that did not fish the entire opening.

Week	Start Date	Chinook	Sockeye	Coho	Pink	Chum	Permits	Days	Boat Days
25	15-Jun								
26	22-Jun								
27	29-Jun								
28	6-Jun	104	11,224	1,209	10,578	5,141	37	3	111
29	13-Jul	50	10,581	1,049	15,959	4,252	52	4	145
30	20-Jul	108	14,545	2,906	29,636	18,746	65	5	184
31	27-Jul	39	4,048	733	7,622	4,850	27	4	108
32	3-Aug	5	1,231	1,090	6,930	2,687	10	4	40
33	10-Aug	3	284	621	2,353	1,527	12	4	48
34	17-Aug	0	145	1,170	935	950	10	4	40
35	24-Aug	0	63	2,113	605	982	13	4	52
36	31-Aug	0	30	1,478	1,486	366	20	3	60
37	7-Sep	1	5	10,116	9	6,570	41	4	164
38	14-Sep	0	2	9,226	0	2,628	31	4	124
39	21-Sep	0	0	4,295	0	2,687	26	4	104
40	28-Sep	0	0	2,362	0	300	12	4	48
41-42	5-Oct	2	0	427	0	15	8	5	22
Total		312	42,158	38,795	76,113	51,701	364	56	1,250
1992-2003 Avg.		1,282	57,327	18,339	32,913	48,500		46	1,413
2003 % 10-yr Avg.		24%	74%	212%	231%	107%		122%	88%

Harvest sharing of Stikine sockeye stocks is based on inseason abundance forecasts produced by the Stikine Management Model (SMM) (Table 8). The marine and inriver catches of planted Tuya fish were estimated from analysis of otoliths for thermal marks. Egg diameter analysis of inriver catches was used to estimate the relative abundances of Tahltan and Mainstem fish to Tuya fish in the Stikine River. The historical average weekly stock compositions were used to estimate the harvests of Tahltan and Mainstem Stikine sockeye stocks. Based on these analyses and ratios, the Sumner Strait fishery (Sub-districts 106-41 & 42) harvested 22,000 Stikine sockeye salmon, 25% of the total sockeye harvest in those Sub-districts. The Clarence Strait fishery (Sub-district 106-30) harvested an estimated 1,400 Stikine fish, 4.9% of the harvest in that sub-district. It is estimated that the District 108 fishery harvested 31,200 Stikine fish, 74% of the total sockeye harvest in that area. An estimated 54,500 Stikine sockeye salmon were harvested in commercial gillnet fisheries from both districts, representing 34% of the total sockeye catch. Of these Stikine sockeye salmon, an estimated 16,800 fish were produced by the joint U.S./Canada fry-planting projects on the Stikine River.

Preliminary postseason run reconstruction estimates (Table 9) differ from the inseason management model estimates.

Table 8. Weekly forecasts of run size and total allowable catch for Stikine River sockeye salmon as determined inseason by the Stikine Management Model, 2002.

Stat.	Start Date	Forecasts		TAC		Cumulative Catch	
Stat. Week	Start Date	Run Size[a]	TAC	U.S.	Canada	U.S.	Canada[b]
25	15-Jun	184,000	123,108	61,554	61,554	356	0
26	22-Jun	184,000	123,108	61,554	61,554	3,602	832
27	29-Jun	184,000	123,108	61,554	61,554	8,972	8,145
28	6-Jul	178,079	114,675	57,338	57,338	23,561	21,674
29	13-Jul	207,785	145,090	72,545	72,545	30,339	28,516
30	20-Jul	252,873	189,423	94,712	94,712	47,568	45,260
31	27-Jul	281,093	218,124	109,062	109,062	51,780	54,700
32	3-Aug	281,137	217,907	108,953	108,953	54,505	56,474
33	10-Aug	272,118	208,825	104,413	104,413		

[a] U.S. forecasts were as follows: the preseason forecast was used for weeks 25, 26, and 27; the inriver test fishery CPUE data for the remainder of the sockeye season. (Canada independently generates forecasts that may use different criteria in some weeks.)

[b] Cumulative catch for Canada does not include approximately 7,000 Tuya ESSR fishery catch.

The estimated Stikine sockeye run was 268,408 fish (Table 8). The estimated spawning escapement of sockeye salmon past Tahltan Lake weir was 53,933 fish, of which 3,945 were taken for broodstock and 400 for biological samples. This is well above the desired point goal of 24,000 spawners and is the first time in 6 years this goal has been met or exceeded. The estimated spawning escapement to the Stikine River mainstem was approximately 89,000 fish, which is also well above the lower goal range of 30,000 fish.

Table 9. Preliminary run reconstruction for Stikine sockeye salmon, 2002.

	Tahltan	Tuya	Mainstem	Total
Escapement[a]	53,933	13,894	89,000	156,827
Broodstock	3,945			
ESSR[b] or Samples	400	7,031		
Spawning	49,588		89,000	138,588
Excess[c]		6,863		
Canadian Harvest				
Indian Food	3,691	1,765	606	6,062
Upper Commercial	275	133	45	453
Lower Commercial	21,317	9,610	19,032	49,959
Total	25,283	11,508	19,683	56,474
Test Fishery Catch	425	158	320	903
Inriver Run	79,641	25,560	109,003	214,204
U.S. Harvest				
106-41& 42	12,740	4,675	4,209	21,624
106-30	631	184	601	1,416
108	9,407	3,621	18,136	31,164
106 & 108 Test Fisheries	-	-	-	-
Total	22,778	8,480	22,946	54,204
Total Run	102,419	34,040	131,949	268,408
Escapement Goal	24,000	7,200	30,000	61,200
TAC	78,419	26,840	101,949	207,208
Canada TAC	39,210	13,420	50,975	103,604
Actual Catch[d]	25,283	11,508	19,683	56,474
% of TAC	64%	86%	39%	55%
U.S. TAC	39,210	13,420	50,975	103,604
Actual Catch[e]	22,778	8,480	22,946	54,204
% of TAC	58%	63%	45%	52%

[a] Escapement into terminal and spawning areas from traditional fisheries.

[b] Catch allowed in terminal areas under the Excess Salmon to Spawning Requirement license.

[c] Fish returning to the Tuya system are not able to access the lake where they originated due to velocity barriers.

[d] Does not include ESSR or test fishery catches.

[e] U.S. harvest estimate differs from Joint Interception Committee estimate because no estimates are made for catches. Does not include ESSR or test fishery catches other than in the listed fisheries.

The postseason estimates are likely to change when stock identification analyses are completed.

Taku River Area Fisheries

The traditional District 111 commercial drift gillnet fishery salmon harvests totaled 1,465 chinook, 205,433 sockeye, 23,704 coho, 112,395 pink, and 170,420 chum salmon (Table 10). Catches of chinook, coho, pink and chum salmon were 50%, 48%, 112% and 54% of the ten-year (1993-2002) averages, respectively. The catch of sockeye salmon was 141% of average. Hatchery stocks contributed significantly to the catches of both sockeye and chum salmon, and minor numbers to the harvests of other species.

Table 10. Weekly salmon catch in the Alaskan District 111 commercial drift gillnet fishery, 2003.

Statistical Week	Start Date	Chinook	Sockeye	Coho	Pink	Chum	Boats	Days	Boat Days[b]
25	15-Jun	365	5,120	1	1	3,002	63	3.0	189
26	22-Jun	457	6,463	9	608	6,442	79	3.0	237
27	29-Jun	312	23,032	106	17,777	18,159	85	4.0	340
28	6-Jul	212	42,050	177	32,939	32,706	114	4.0	456
29	13-Jul	53	20,562	136	19,187	36,974	125	4.0	500
30	20-Jul	37	24,003	598	12,034	37,376	112	4.0	448
31	27-Jul	23	30,670	1,001	17,490	24,730	114	5.0	570
32	3-Aug	3	36,844	740	8,474	5,552	105	4.0	420
33	10-Aug	3	11,965	1,000	3,635	4,273	73	4.0	292
34	17-Aug	0	3,147	1,009	241	305	33	3.0	99
35	24-Aug	0	1,006	2,504	9	86	29	3.0	87
36	31-Aug	0	119	1,883	0	123	16	3.0	48
37	7-Sep	0	437	7,276	0	414	23	4.0	92
38	14-Sep	0	15	3,857	0	124	15	5.0	75
39	21-Sep	0	0	3,161	0	141	14	7.0	98
40-42	28-Sept	0	0	249	0	13	4	18.0	28
Total		1,465	205,433	23,704	112,395	170,420		78	3,979
	1993-2002 Average	2,923	146,087	49,070	100,667	312,823		50	3,594
2003 as % of 10-Year Avg.		50%	141%	48%	112%	54%		156%	110%

[a] The days open listed in this table reflect open fishing periods for all waters of District 11. Taku Inlet only, statistical area 111-32, was open for two days each week during weeks 31-33 and 35-36.

Approximately 84% of the chinook salmon were harvested from Taku Inlet and 16% were harvested from Stephens Passage. Alaskan hatchery fish contributed 232 fish as estimated by coded wire tag (CWT) analysis, or approximately 16% of the harvest. The Taku River stock assessment program estimated the above-border run-size at approximately 42,063 fish. The ten-year (1993-2002) average above-border run-size is 52,081. The escapement goal range is from 30,000 to 55,000 chinook salmon.

The total Taku River sockeye salmon run was estimated at 328,899 fish (Table 11). Based on the escapement goal midpoint of 75,000 wild Taku River sockeye, the TAC was 253,899 fish. The U.S. TAC was 207,474 Taku River sockeye (82% of the TAC). It is estimated that the total harvest of Taku River sockeye salmon was 135,466 fish, 55% of the TAC, and 66% of the total sockeye harvest in the District. Sockeye salmon produced from a joint U.S./Canada fry-planting program at Tatsamenie Lake contributed an estimated 794 fish, or 0.3% of the total sockeye catch. Additionally, an estimated 48,186 Snettisham

Hatchery sockeye salmon were harvested in common property fisheries in District 111, of that total approximately 18,065 were harvested inside Port Snettisham.

The preliminary estimated above-border in-river wild Taku River sockeye run, based on mark-recapture estimates at Canyon Island, was 193,453; 141% of the 10-year (1993-2002) average of 137,074. Subtracting the cumulative Canadian catch of wild Taku River sockeye salmon (32,601), the cumulative Canadian test fishery catch (150), and the Canadian aboriginal food fishery catch (267), the escapement of wild Taku River sockeye salmon was 160,306; 214% of the escapement goal of 75,000. Sockeye escapements to Kuthai, Little Trapper and Tatsamenie Lakes based on weir counts are not available yet. Escapements of sockeye salmon to Port Snettisham systems were fair, with 7,014 counted through a weir at Speel Lake and an aerial survey estimate of 5,000 to 10,000 sockeye salmon at Crescent Lake.

Table 11. Preliminary Taku sockeye salmon run reconstruction, 2003. {Estimates do not include spawning escapements below the U.S./Canada border.

	Taku[a]
Estimated Taku In-river Run	193,453
Estimated U.S. Catch Taku fish	135,466
Total Run	328,899
Escapement Goal	75,000
TAC	253,899
U.S. TAC	207,474
Estimated U.S. Taku Catch	135,466
Projected personal use catch	5,000
Remaining U.S. TAC	67,028
U.S. harvest share (catch/total TAC)	0.553
Canada TAC	65,116
from .18 of total TAC	46,425
from .20 of inriver run >100,000	18,691
Estimated Canada catch	32,601
Remaining Canada TAC	32,515
Canada harvest share (cat/total TAC)	0.256

[a] United States and Canada TAC computations based on harvest sharing arrangement described in Annex IV, Chapter 1, (3)(b)(1)(i).

Coho stocks harvested in District 111 include runs to the Taku River, Port Snettisham, Stephens Passage, and local Juneau area streams as well as Alaskan hatcheries. The coho catch of 23,704 fish was 48% of the 10-year (1993-2002) average. Approximately 87% of the coho were harvested in Taku Inlet (below the ten-year average of 91%); 12% were harvested from Stephens Passage and 1% were harvested from inside Port Snettisham. Alaskan hatchery coho salmon contributed 1,606 fish or 7% of the District 111 harvest. Weekly coho harvests were above average during SW27, but below average during the remainder of the season. The peak week for the commercial drift gillnet coho catch (7,276) was SW37. For most of the season, weekly estimates of Taku River coho abundance indicated an above average run size. The final inriver abundance estimate of coho escapement above Canyon Island was 171,561 fish. The 2003 inriver abundance estimate for coho was the second highest since 1987, and approximately 2.25 times the 15-year

(1987-2002) average of 76,105. The cumulative Canadian coho catch was 2,742. The coho escapement for the Taku River was estimated to be approximately 169,000 fish, greatly surpassing the escapement goal of 35,000.

The District 111 pink salmon harvest of 112,395 fish was 112% of the ten-year (1993-2002) average. The escapement number to the Taku River was unknown; however, the number of pink salmon passing through the fish wheels at Canyon Island was used as an index of escapement. The 2001 (parent year) Canyon Island pink salmon fish wheel catch was 9,134. The 2003 Canyon Island pink salmon fish wheel catch of 15,492 was 23% above the 1993-2002 average.

The catch total of 170,420 chum salmon was 53% of the ten-year (1993-2002) average, and was comprised almost entirely of summer run fish (99%). The summer chum run is considered to last through mid-August (week 33) and is comprised mostly of domestic hatchery fish, with small numbers of wild stock fish contributing. Chum salmon returning both to DIPAC hatcheries in Gastineau Channel and to the DIPAC remote release site at Limestone Inlet contributed a major portion of the catch but quantitative contribution estimates are not available. Approximately 63% of the District 111 chum catch was made in Taku Inlet, 32% in Stephens Passage, and 2% inside Port Snettisham. The catch of 1,206 fall chum salmon (i.e. chum salmon caught after week 33) was 18% of the ten-year (1993-2002) average. Most of these chums are probably of wild Taku and Whiting River origin. Escapement numbers to the Taku River are unknown; however, the numbers of fall chums passing through the fish wheels at Canyon Island were used as an index of escapement. The index number for 2003, 249 fall chums, was a slight increase from 205 recorded in 2002 and is 46% of the long-term average.

Several other fisheries in the Juneau area harvested Taku River stocks in 2003. Personal use salmon permits were issued for Taku River sockeye salmon. Estimates of the harvest in that fishery are not available at this time although a projection of 5,000 fish is included for preliminary run size projections. In 2003 an estimated 12,697 chinook salmon were harvested by sport fisheries in the Juneau area. A number of stocks are known to contribute to the Juneau area sport fishery, including those from the Taku, Chilkat, and King Salmon rivers, and local hatchery stocks, but the major contributor of large, wild mature fish was believed to be the Taku River. Of 12,697 chinook harvested 1,337 (11%) were estimated to be of Taku River origin based on coded wire tag analysis and maturity data. The July Hawk Inlet shoreline purse seine fishery in Chatham Strait opened for 10 hours in week 28 from Pt. Marsden north to the latitude of Pt. Couverden, and for 10 hours in week 29 from Pt. Hepburn north to the latitude of Pt. Couverden. The catches for these fisheries totaled 52 chinook, 8,342 sockeye, 513 coho, 178,219 pink, and 38,693 chum. A large number of stocks, including the Taku River, contribute to this pink salmon directed fishery. A purse seine test fishery was also conducted each week during the first two weeks in July, with catches totaling 7 chinook, 574 sockeye, 24 coho, 3,619 pink and 4,042 chum salmon.

Alsek River Area Fisheries

Although harvest sharing arrangements of Alsek salmon stocks between Canada and the U.S. have not been specified, Annex IV of the Pacific Salmon Treaty does call for a cooperative attempt to rebuild depressed chinook and early-run sockeye stocks. Preseason expectations were for slightly above average returns of sockeye and coho salmon and a slightly below average return of chinook salmon. These expectations were based on parent-year escapements to the Klukshu River. The Alsek River commercial fishery opened on the first Monday in June, statistical week 23 (June 2). The initial opening was for 24 hours. For the next two weeks of the season weekly openings were extended to 72 hours as sockeye CPUE remained more than triple the average. The fourth opening was extended to 48 hours when CPUE dropped to double the average.

During the first week of July the weekly opening was extended to 72 hours as CPUE again climbed to triple the average. The sockeye run remained strong from that point, and each weekly opening was extended to 72 hours through the end of the sockeye season. (weeks 28 through 33). The fishery targeted coho stocks after late August and fishing times remained at three days per week for the remainder of the coho season.

The Dry Bay commercial set-gillnet fishery harvested 942 chinook, 39,755 sockeye, and 47 coho salmon (Table 11). No pink or chum salmon were harvested. The chinook harvest was 155% of the 1993-2002 average, the sockeye harvest was 220% of average and the third highest catch on record. Very little effort was recorded during the coho season due to market conditions and the coho harvest was minimal. The number of fishing days was 66. The total effort expended in the fishery was 364 boat-days, 83% of the 1993-2002 average.

Table 12. Weekly catch and effort in the U.S. commercial fishery in the Alsek River, 2003.

	Start	Catch					Effort		Permit
Week	Date	Chinook	Sockeye	Coho	Pink	Chum	Permits	Days[a]	Days
23	1-Jun	54	242	0	0	0	9	1	9
24	8-Jun	658	2,005	0	0	0	11	3	33
25	15-Jun	164	4,309	0	0	0	12	3	36
26	22-Jun	59	1,614	0	0	0	11	2	22
27	29-Jun	3	6,592	0	0	0	9	3	27
28	6-Jul	4	3,200	0	0	0	11	3	33
29	13-Jul	0	2,796	0	0	0	9	3	27
30	20-Jul	0	4,306	0	0	0	8	3	24
31	27-Jul	0	5,756	13	0	0	9	3	27
32	3-Aug	0	7,405	0	0	0	6	3	18
33-43	10-Aug	0	1,530	34	0	0	6	18	108
Total		942	39,755	47	0	0	15	45	364
1993-2002	Avg.	608	18,074	6,464	2	103	26	51	438
2003 % of 1992-2002 Avg.		155%	220%	1%			58%	88%	83%

[a] Days above represents actual effort days. Alsek was open, but not fished, another 21 days in 2003

Transboundary River Joint Enhancement Activities

In May and June of 2003 approximately 5 million sockeye fry were returned to Canadian Lakes. (Table 13). The fry were produced at Snettisham Hatchery from eggs collected in 2002 at Tatsamenie Lake (2.3 million eggs) and Tahltan Lake (4.1 million eggs). Escapement at Tahltan was large enough to allow a fry plant of 1.1 million fry in Tuya Lake year as well as 2.6 million into Tahltan.

Table 13. Releases and survivals of 2002 brood sockeye salmon outplanted into Stikine and Taku systems in May – June 2003.

Brood Stock	System Stocked	# of Trips	# of Fry Released	Green to Eye % Survival	Green to Release % Survival
Tahltan L.	Tahltan L. (Stikine)	5	2,623,000	92.6%	94.3%
	Tuya L. (Stikine)	2	1,124,000	90.4%	88.5%
Tatsamenie L.	Upper Tats.L. (Taku)	3	911,000	82.3%	39.6%
	Ave/Totals	10	4,758,000	88.4%	73.3%

The IHN virus was detected in three Tatsamenie incubators during the incubation period dropping overall hatchery survivals to 58.9%; there was a loss of two more incubators production when fry being fed at the lake suffered an IHN outbreak and were destroyed. The loss of Tatsamenie fry to IHNV both during incubation at Snettisham and during the net pen rearing at Tatsamenie Lake is something that will happen with the culture of sockeye salmon. The strategy of compartmentalization and isolation provides assurance that losses are kept to a minimum. It is worth noting that the IHN incidence in the brood stock for these losses was one of the highest we have seen. The TTC will be spending considerable time on this issue at their fall meeting in Whitehorse.

The year 2003 egg takes started on September 1st at Tahltan Lake and Sept 19th at Tatsamenie Lake. At Tahltan, 1,936 females collected produced 5,614,000 green eggs. In Tatsamenie Lake, 622 females were spawned yielding an estimated 2,627,000 green eggs. The disposition of the fry resulting from 5.6 million eggs from Tahltan Lake will be discussed at the fall 2003 TTC meeting in Whitehorse; all of the brood year 2003 Tatsamenie Lake fry will be planted in Tatsamenie Lake in 2004.

As part of an ongoing effort to better understand options at the Tuya barrier on the Stikine River, Ron Josephson and two engineers visited the site in July 2003. An engineer's reconnaissance report was provided to the department. In summary, providing fish passage past this barrier appears to be more challenging and expensive than earlier reports have indicated.

During the 2003 season the ADFG thermal mark lab received 13,000 sockeye otoliths collected by ADFG and DFO staff as part of the U.S./Canada fry-planting evaluation program. These collections came from commercial and test fisheries in U.S. waters and in Canadian fisheries on the Taku and Stikine Rivers over a 12-week period. In addition, several escapement samples were examined. Combined, the laboratory processed 99% of the otoliths received and provided estimates on hatchery contributions for almost 100 distinct sampling collections. Of these totals, 2,260 otoliths were identified and classified as belonging to one of 30 marked groups. Estimates of the percentage of hatchery fish contributed to commercial fishery catches were provided to ADF&G and DFO fishery managers 24 to 48 hours after samples arrived at the lab.

Southeast Alaska Chinook Salmon Fishery

The 2003 preseason chinook salmon target harvest level was determined using the abundance index of 1.79 generated with the CTC model calibration 0308. The corresponding target harvest of 366,100 was identified using Table 1 of Chapter 3. The preliminary estimate of the 2003 chinook salmon catch by all Southeast Alaska fisheries was 448,900 fish (Table 14). The base catch (total minus the add-on) was 386,500 fish, 5.6% above the target harvest of 366,100.

Table 14. Chinook all-gear catches in Southeast Alaska, 1987 to 2003, and deviation from the ceiling for years for which there were ceilings. Catches in thousands.

Year	Total Catch	Add-on Catch	Target Harvest	Base Catch	Deviation Number	Deviation Percent
1987	281.9	16.7	263	265.2	2.2	0.8%
1988	278.9	23.7	263	255.2	-7.8	-3.0%
1989	291.1	26.7	263	264.4	1.4	0.5%
1990	366.9	53.7	302	313.2	11.2	3.7%
1991	357.0	61.4	273	295.6	22.6	8.3%
1992	260.0	38.3	263	221.7	-41.3	-15.7%
1993	301.9	33.7	263	268.2	5.2	2.0%
1994	261.9	30.9		231.0		
1995	231.1	56.6		174.5		
1996	217.2	68.2		149.0		
1997	339.2	47.6		291.6		
1998	271.0	26.2	260	244.8	-15.2	-5.9%
1999	251.0	47.7	184.2	198.8	14.6	7.9%
2000	263.3	74.3	178.5	186.5	8.0	4.5%
2001	260.0	76.1	250.3	186.8	-63.5	-25.4%
2002	442.2	68.3	371.9	370.3	-1.6	-0.43%
2003	448.9	60.2	366.1	386.5[1]	20.4	5.6%

Troll Fishery

The winter troll fishery harvested 50,900 chinook salmon from October 11, 2002 through April 12, 2003. A total of 4,400 fish were from Alaska hatcheries with 3,600 fish counting toward the Alaska hatchery add-on.

Spring fisheries were conducted prior to the July general summer opening. The spring fisheries are designed to increase the harvest of Alaskan hatchery produced chinook salmon by allowing trolling in small areas close to the hatchery where these fish concentrate. Terminal fisheries are a portion of the spring fisheries and occur directly in front of hatcheries or at remote release sites.

While there is no ceiling on the number of chinook salmon harvested in the spring fisheries the take of Treaty chinook salmon is limited according to the percentage of the Alaskan hatchery fish taken in the fishery. The catches in 2003 were: 4,200 fish in the terminal fisheries and 35,400 fish in the general spring fisheries. A total of 31% (15,900) of the chinook salmon landed in these fisheries were from Alaska hatcheries of which 13,800 counted toward the Alaska hatchery add-on.

In the 2003 summer season there was one chinook salmon retention period. Due to low effort in the troll fishery the chinook retention period began on July 1 and continued through August 8. The fishery harvested 240,600 chinook salmon of which 7,700 fish were from Alaska hatcheries (6,300 counting toward the Alaska hatchery add-on).

Net Fisheries

Net fisheries have a guideline harvest of 8,600 chinook salmon, plus 4.3% of the annual harvest ceiling established by the Pacific Salmon Commission (15,700) for a total net target harvest of 24,300, plus Alaska hatchery add-on chinook. Catches of chinook salmon in the net fisheries are incidental to the harvest of other species and only constitute a small fraction (<1.0%) of the total net harvest of all species. In 2003, the net fisheries harvested 41,200 chinook salmon of which 18,600 were from Alaska hatcheries with 17,900 counting as Alaska hatchery add-on.

Recreational Fisheries

The 2003 recreational fishery had an estimated harvest of 76,700 chinook salmon of which 28,000 were from Alaska hatcheries (20,800 counting toward the Alaska hatchery add-on).

Southeast Alaska Coho Salmon Fisheries

Attachment B of the June 30, 1999 U.S.-Canada Agreement relating to the Pacific Salmon Treaty specifies provisions for inseason conservation and information sharing for northern boundary coho salmon. In 2003, troll CPUE in Area 6 in the early weeks of the fishery averaged 51.0, which was above the highest specified boundary area conservation trigger of 22. The mid-July projection of region-wide total commercial harvest was greater than the 1.12 million trigger for an early region-wide troll closure, specified in Alaska Board of Fisheries regulation and the PST conservation agreement.

The all-gear catch of coho salmon totaled 2.50 million fish of which 2.16 million were taken in commercial fisheries (Table 15). Weekly troll CPUE cumulated over the summer season was close to the 10-year average. Catch rates were well below average early in the season during the chinook retention period but increased steadily to a record high level for early September. Despite low effort, drift gillnetters accounted for a large fraction of the commercial harvest (21.5%) and did particularly well in the late fishery at Tree Point. The set gillnet catch was well below average because more remote systems in the Yakutat area were not fished for market reasons. Nearly all of the set gillnet catch was taken from the Situk-Ahrnklin system. The very preliminary sport catch of 334,000 fish is the largest on record.

Wild production accounted for 1.67 million fish (77%) in the commercial catch. Run sizes were down substantially from 2002 but escapement goal ranges were exceeded for all indicator stocks with goals. Exploitation rates were substantially below historical averages. Troll fishery exploitation rates ranging from 23-24% on three long-term inside indicator stocks were higher than 2002 rates of 17-18% but well below 1990s averages of 31-41%. The troll exploitation rate of 31% on an outer coastal stock (Ford Arm Lake) was the lowest ever observed and well below the 1990s average of 55%. Gillnet and marine sport fisheries compensated for low troll exploitation on some stocks. All-gear exploitation rate estimates of 55% and 65%, respectively, for Hugh Smith Lake and the Berners River were well above comparable estimates of 38% and 45% in 2002. The 2003 region-wide troll coho fishery began July 1 and ended September 30, with no closed periods.

Table 15. Coho salmon harvest in Southeast Alaska in 2002 by gear type (preliminary).

Gear Type	Harvest
Troll	1,223,500
Purse seine	401,000
Drift Gillnet	465,200
Set Gillnet	74,200
Sport	334,000
Total	2,497,900

Preliminary 2002 Chinook and Coho Salmon Catches in Washington and Oregon Fisheries

The 2003 season was conducted under the renewed Annex IV arrangements of the Pacific Salmon Treaty. This report covers the fisheries that occur between Cape Falcon and the U.S./Canadian border. These fisheries are subject to the chinook ISBM obligations contained within the 1999 Agreement. In this same region, this year's coho fisheries were conducted under the presumption that the Pacific Salmon Treaty's abundance based management plan agreed upon in February 2002 was in effect.

Preseason Planning

Southern U.S. regional management coordination occurs within the preseason Pacific Fisheries Management Council process commonly referred to as "North of Falcon". Within this process, participants evaluate the biological and social/economic consequences of options for the outside (ocean) and inside (Puget Sound and in-river) fisheries. The end product is a total fishery package that achieves both domestic and Pacific Salmon Treaty obligations as assessed by our domestic fishery regulation assessment models.

Chinook Salmon Management

Under the 1999 Pacific Salmon Treaty Agreement, Council fisheries are subject to the Individual Stock Based Management provisions of Annex IV, Chapter 3. These provisions require the adult equivalent harvest rate by all U.S. fisheries south of the U.S./Canada border to be reduced by 40% from the 1979-1982 base period for chinook stocks failing to achieve escapements at or above levels associated with maximum sustainable harvest as adopted by the Pacific Salmon Commission.

Coho Salmon Management

U.S. coho stocks were all forecasted to be at the moderate to abundant levels and were not anticipated to represent a management constraint in southern U.S. mix-stock fisheries. The preseason manager-to-manager meeting between U.S. and Canadian interests identified the only Canadian stock of concern for southern U.S. fisheries as Thompson Coho, which was in low status.

Descriptions of the various regional fisheries, their general management constraints, and preliminary estimates of landed catch are listed in the following subsections. Tables 1 and 2 contrast preseason projections of catches with the preliminary estimates of landed catch for chinook and coho in the various fisheries of interest to the Pacific Salmon Commission, and also provide historical perspective on those fisheries back to 1995. Complete fishery catch reports and preliminary estimates of spawning escapements are not available at this time.

North of Cape Falcon Ocean Fisheries

Management objectives for chinook fisheries in this area are to satisfy standards for ESA-listed stocks, and to the extent possible, provide for viable ocean and in-river fisheries while protecting depressed Columbia River natural stocks and meeting hatchery fall chinook brood stock needs. Lower Columbia River and Bonneville Pool hatchery fall chinook have historically been the major stocks contributing to ocean fishery catches in the North of Cape Falcon area. In 2003, federal ESA standards and the need to constrain impacts on Puget Sound and lower Columbia River chinook stocks guided fishery management decisions.

Coho fisheries were structured to address standards for ESA listed stocks, especially Oregon Coastal Natural (OCN) coho, and PST obligations regarding Thompson River coho. U.S. fisheries including those within Puget Sound were constrained to maintain a total exploitation rate under 10 percent on Thompson coho as per agreement.

Note that all 2003 season catch numbers are preliminary.

Treaty Troll Fishery

The treaty troll fishery was constrained by a chinook quota of 60,000 and a coho quota of 90,000. The season was comprised of a May/June chinook directed fishery and a July through September 15 all species fishery. The season concluded with a catch of 34,674 chinook and 10,912 coho.

Non-treaty Troll Fishery

The preliminary estimates of non-tribal harvest in the 2003 North of Falcon troll fishery are 69,173 chinook and 15,257 coho. The chinook catch represents 100% of the 69,400 chinook harvest quota, with 36,789 chinook harvested in the May 1-June 15 fishery and the remaining 32,384 harvested in July, August and September. The coho catch represents harvest in a mark-selective fishery (healed adipose fin-clips) in all areas in July, August and September. Total landings were 20% of the 75,000 coho harvest quota.

Recreational Fisheries

Columbia Ocean Area (including Oregon)

Ocean Area 1 (Columbia Ocean Area) opened for recreational all-species salmon fishing on Sunday, June 29 with a quota of 112,500 coho and a pre-season guideline of 12,700 chinook. The fishery closed on its automatic closure date, September 30. The catch estimates for Area 1 through September 30 are 8,100 chinook and 106,411 coho (95% of the quota). In-season regulation changes to this area included opening the fishery seven days per week effective July 25, and reducing the coastwide recreational chinook TAC to 54,600 after a transfer of chinook to the non-Treaty troll fishery effective August 21.

Westport

Ocean Area 2 (Westport) opened for all-species recreational salmon fishing on Sunday, June 22 with a quota of 83,250 coho and a pre-season guideline of 40,600 chinook. The fishery closed on its automatic closure date, September 14. The catch estimates for Area 2 through September 14 are 21,820 chinook and 39,268 coho (47% of the quota). In-season regulation changes to this area included opening the fishery seven days per week effective July 25, and reducing the coastwide recreational chinook TAC to 54,600 after a transfer of chinook to the non-Treaty troll fishery effective August 21.

La Push

Ocean Area 3 (La Push) opened for all-species recreational salmon fishing on Sunday, June 22 with a quota of 5,750 coho and a pre-season guideline of 2,300 chinook[5]. The fishery closed on its automatic closure date, September 14, and reopened September 20 through October 5 in the "bubble" area[6] only around the mouth of the Quileute River. The catch estimates for Area 3 through October 5 are 1,904 chinook and 3,462 coho (60% of the quota). The only in-season regulation change to this area was the reduction of the coastwide recreational chinook TAC to 54,600 after a transfer of chinook to the non-Treaty troll fishery effective August 21.

Neah Bay

Ocean Area 4 (Neah Bay) opened for all-species recreational salmon fishing on Sunday, June 22 with a quota of 23,400 coho and a pre-season guideline of 3,900 chinook. The fishery closed on its automatic closure date, September 14. The catch estimates for Area 4 through September 14 are 4,812 chinook and 20,102 coho (86% of the quota). The only in-season regulation change to this area was the reduction of the coastwide recreational chinook TAC to 54,600 after a transfer of chinook to the non-Treaty troll fishery effective August 21.

August 10. The catch estimate for Area 4 through Sunday, September 8 is 3,783 chinook and 8,347 coho.

Coastwide Summer Fishery Totals

Overall recreational total allowable catches in the area between Cape Falcon, Oregon and the U.S. – Canada border of 54,600 chinook[7] and 225,000 coho applied to the summer fisheries. Through Sunday, October 5, total catch is estimated at 36,634 chinook (67% of the quota) and 169,217 coho (75% of the quota) coastwide.

Washington Coastal Fisheries

North Washington Coastal Rivers

Net and sport fisheries directed at salmon in this region were implemented based upon pre-season, tribal-state agreements and subject to in-season adjustment. The north coastal rivers net harvest (all by tribal fisheries) includes catch for the Waatch, Sooes, Quillayute, Hoh, Queets, Quinault, Moclips, and Copalis rivers. The 2003 commercial net fisheries in north coastal rivers have harvested an estimated 10,169 chinook and 44,654 coho through November. Recreational fishery harvest estimates are unavailable at this time.

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[5] Sub-quotas of 5,750 coho and 2,300 chinook were in effect in Area 3 for the time period June 22 - September 14. Effective September 20, the fishery reopened through October 5, or until attainment of the total area quota of 5,850 coho or 2,400 chinook.

[6] Inside an area defined by a line from Teahwhit Head northwest to "Q" buoy to Cake Rock, then true east to the shoreline.

[7] Overall 2003 coastwide recreational TAC of 59,600 chinook, less 5,000 transferred in-season to the non-Treaty troll fishery.

Grays Harbor

Net and sport fisheries directed at salmon in Grays Harbor are implemented based upon pre-season, tribal-state agreements and subject to in-season adjustment. Harvest for Grays Harbor includes catch from both the Humptulips and Chehalis rivers. The 2003 tribal net fisheries have harvested an estimated 909 chinook and 11,336 coho through October. The preliminary 2003 non-Indian commercial net harvest in Grays Harbor was 93 chinook, and 6,330, chum salmon. Recreational fishery harvest estimates are unavailable at this time.

Columbia River Fisheries

Treaty-Indian and non-Indian commercial and sport fisheries for chinook and coho in 2003 occurred during the winter/spring (February-May), summer (June-July) and fall (August-October) periods. All fisheries were constrained by impacts on ESA-listed stocks. Winter/spring fisheries were primarily constrained by impacts on ESA-listed upper Columbia River and Snake River spring/summer chinook. Summer fisheries were constrained by impacts to ESA-listed Snake River spring/summer chinook and Snake River sockeye. Fall fisheries were constrained by impacts to ESA-listed Snake River fall chinook.

The non-Indian winter (February-March 2003) commercial fishery was conducted as a selective fishery and occurred for a total of only three days. A total of 3,200 adipose fin-clipped chinook were taken in this fishery.

The 2003 mainstem recreational fishery operated under selective fishery regulations and 18,000 fin-clipped chinook were landed in over 161,000 angler trips.

The treaty Indian fishery caught 18,200 spring chinook including commercial, ceremonial and subsistence catches.

Non-Indian fall fisheries were managed not to exceed a total impact rate (including ocean and Columbia River fisheries) of 49% on LRH (Coweeman) fall chinook. Early fall mainstem fisheries consisted of chinook salmon seasons that occurred during the month of August. Total chinook catch was 15,700 fish.

Late fall mainstem fisheries were initiated on September 15 and completed on October 31 and included general salmon seasons plus coho and chinook target seasons. Open areas included most or all of Zones 1-5 with certain closed areas adopted to protect ESA listed chinook, coho, and chum. Preliminary estimates of landings for the fall season of the non-Indian commercial fishery were 149,500 coho and 42,700 chinook.

The Buoy 10 fishery (from the mouth upstream to the Tongue Point/Rocky Point line) opened August 1 for chinook, adipose fin-clipped coho, and adipose fin-clipped steelhead. For the season a total of 86,400 angler trips resulted in 16,300 chinook and 54,800 coho being retained.

The mainstem Columbia River (from the Tongue Point/Rocky Point line upstream to Hwy 395 Bridge at Pasco) opened for chinook and coho on August 1. Non-adipose fin-clipped coho were released downstream from Bonneville Dam. For this season a total of 113,600 angler trips resulted in a catch of 26,200 chinook, exceeding the previous record catch of 21,200 in 2002.

Treaty Indian summer season fisheries harvested 3,587 chinook in commercial gillnet fisheries and 850 chinook in Ceremonial and Subsistence fisheries for a total of 4,437 summer chinook.

The Treaty Indian fall commercial fishery consisted of seven weekly 3-1/2 to 4-1/2 day fishing periods from August 26 to October 11. Preliminary catch data indicate commercial gillnet fisheries landed 125,165 fall chinook with an additional 670 fall chinook harvested in Ceremonial and Subsistence fisheries. Total treaty fall chinook landings were 125,835.

Puget Sound Fisheries

Puget Sound marine fisheries of interest to the Pacific Salmon Commission in 2003 were regulated to meet conservation and allocation objectives for chinook, coho, pink, chum and sockeye salmon stocks, per tribal-state agreement. For Puget Sound chinook listed under the ESA, fisheries were managed according to the state and tribal joint resource management plan, the Puget Sound Comprehensive Chinook Harvest Management Plan. This management plan defines limits to total exploitation rates for natural stocks and was determined by the National Marine Fisheries Service to be consistent with requirements specified under the ESA 4(d) Rule.

Release requirements were applied to many recreational and commercial fisheries for chinook, coho and chum salmon, the latter to protect ESA-listed summer chum.

Strait of Juan de Fuca Recreational

Selective recreational fisheries for marked hatchery chinook and coho were opened in the Strait of Juan de Fuca during 2003 as follows:

• Catch Area 5	Marked chinook only, from July 5 through August 3
• Catch Area 6 west of a true north/south line through buoy two just east of Ediz Hook	Marked chinook only, from July 5 through August 3
• All of Areas 5 and 6	Marked coho only, from July 1 through September 30

Subarea closures: Area 5 waters within the Kydaka Point area were closed to salmon fishing from July 1 through September 30. Area 6 waters within Freshwater Bay were closed to all fishing, and within Port Angeles Harbor were closed to salmon fishing from July 1 through August 31. Dungeness Bay in Area 6 was closed to salmon fishing all year except for an October 1-31 coho fishing opening.

Areas 5 and 6 were open to chinook retention February 15-April 10 and November 1-30 with a 1 fish daily limit. Chinook retention was not allowed other than as noted above.

Recreational catch was estimated by creel survey in Area 5 from July 5 through September 30 and in Area 6 from July 5 through August 3. Catches totaled 4,014 chinook, 38,778 coho and 47,219 pink during that period. Catch record card estimates for salmon taken at times other than noted above are not yet available.

Strait of Juan de Fuca Net

Preliminary estimates of the 2003 catch in Strait of Juan de Fuca tribal net fisheries are 901 chinook and 2,695 coho salmon. Strait impacts to chinook and coho were less than the preseason expectations of 1,350 chinook and 18,800 coho.

Strait of Juan de Fuca Treaty Troll (Area 4B, 5, and 6C)

The preliminary estimates of the 2003 Strait of Juan de Fuca treaty troll fishery are 362 chinook and 188 coho through October. The tribal catch estimates from this area do not include catches from Area 4B during the May-September PFMC management period, which have been included in the North of Cape Falcon troll summary.

San Juan Islands Net (Area 7 and 7A)

Preliminary estimates of the 2003 catch in San Juan Island net fishery directed at sockeye, pink or chum salmon totaled 4,966 chinook and 8,273 coho salmon. San Juan impacts to chinook and coho were less than the preseason expectations of 5,071 chinook and 22,432 coho.

San Juan Islands Recreational

The southern and southeastern (Rosario Strait) portions of this catch area were again closed in 2003 to protect migrating, mature Puget Sound chinook salmon. The remaining area was opened for retention of chinook and coho salmon from July 1 to September 30. Release of unmarked coho salmon was required for the months of August and September. Chinook retention was allowed in the entire area from February 1 – March 31 and for the month of November; chinook retention was not allowed at other times. Recreational fishery harvest estimates are unavailable at this time. Additional subarea closures are described in the Sport Fishing Rules Pamphlet available at http://www.wa.gov/wdfw/fish/regs/2003/2003sportregs.pdf

Inside Puget Sound (Areas 8-13) Recreational

Catch and angler effort estimates for these areas are not available at this time.

Puget Sound Marine Net

To achieve conservation objectives for Puget Sound chinook and coho, very limited commercial fishing opportunities directed at chinook and coho were planned for 2003. Tribal and non-tribal net fishery harvests in Puget Sound marine areas 8-13, not including in-river fisheries, totaled 34,130 chinook compared to the preseason expectation of 20,400. Coho catches totaled 88,509 compared to a preseason expectation of approximately 153,300. Additional tribal net harvest of coho and chinook occurred in river fisheries.

Table 16. Preliminary 2003 landed **CHINOOK** catches for Washington and Oregon fisheries of interest to the Pacific Salmon Commission (rounded to nearest 100). 1/
Note: Shaded cells denote years/areas where some type of mark-selective fishery occurred. Refer to footnote 1/ for details.

Fishery	2003 Preseason 2/	2003 Preliminary Postseason	2002	2001	2000	1999	1998	1997	1996	1995
Ocean Fisheries										
Troll										
Cape Flattery & Neah Bay (Areas 4&4B) 3/	129,400	103,847	60,700	34,900	16,300	40,800	20,500	19,400	14,600	9,800
Quillayute (Area 3)										
Grays Harbor (Area 2)			45,500	14,600	1,600	4,400	300	1,400	400	1,600
Col. R. (OR Area 2 and WA Area 1)			14,600	5,000	2,800	200	0	0	0	0
Sport										
Neah Bay (Areas 4 & 4B)	3,900	4,812	7,200	2,100	600	1,000	200	500	100	100
LaPush (Area 3)	2,300	1,904								
Grays Harbor (Area 2)	40,600	21,820	42,500	15,700	6,300	6,600	1,700	3,100	0	100
Col. R. (OR and WA Areas 1)	7,700	8,100	10,800	7,700	2,300	3,300	400	500	100	400
Inside Fisheries										
Troll										
Strait of Juan de Fuca (Areas 4B, 5 & 6C) 4/	1,210	362	1,400	1,000	1,500	400	400	400	7,600	7,800
Sport										
Juan de Fuca (Area 5&6) 5/	**8,052**	**4,014**	na	47,700	23,900	28,700	26,100	58,500	70,700	67,700
San Juan Islands (Area 7)	na	na								
Puget Sound Sport (Areas 8-13 all year)	na	na								
North WA Coastal Rivers	na	na	na	1,972	1,052	991	1,357	1,349	1,522	1,552
Grays Harbor (Areas 2A-2D)	na	na	na	2,600	1,300	2,000	3,000	3,000	5,700	5,400
Columbia River Sport 6/ **- Spring**	na	18,000	79,300	55,100	40,400	35,800	15,500	30,100	18,000	14,400
Columbia River Sport 6/ **- Fall**	41,400	42,500								
Net										
North WA Coastal Rivers	na	10,169	13,258	8,744	5,261	8,310	9,369	6,564	9,666	7,853
Grays Harbor (Areas 2A-2D) 7/	na	1,002	na	1,050	6,000	1,800	4,500	9,800	8,600	13,300
Columbia River Net – Winter/Spring	na	21,400	309,200	95,200	121,000	69,300	53,300	82,100	59,500	42,600
Columbia River Net – Fall	165,200	189,400								
Strait of Juan de Fuca (Areas 4B, 5 & 6C)	1,350	901	19,630	20,030	13,468	11,511	14,426	23,891	11,042	8,094
San Juan Islands (Areas 6, 7 & 7A) /8	5,071	4,966								
Puget Sound Marine (Areas 8 – 13) 9/	20,400	34,130								

Table 1. Preliminary 2003 landed CHINOOK catches for Washington and Oregon fisheries of interest to the

Pacific Salmon Commission.

Footnotes:

1/ Estimates represent landed catch only and do not include non-retention mortality. 2003 estimates include catches from January 1 through October. Wild chinook release: 2003: Sport areas 5-6 release wild chinook 7/5-8/6 otherwise all chinook release.

2/ 2003 Nontreaty troll quota was 69,400; Treaty troll quota was 60,000; 2003 sport chinook guidelines by area are shown; sport quota of 54,500 is for all areas combined.

3/ Includes Area 4B catch during the PFMC management period (May 1 – September 30).

4/ Includes Area 4B catch outside the PFMC management period (October 1 – April 30).

5/ 2003 & 2002 catches represent summer-only, since CRC annual estimates are not yet available.

6/ Includes both Buoy 10 and mainstem sport catch from below Bonneville Dam.

7/ Includes catch from the upper Chehalis (River+2A+2D) and Humptulips (River+2C).

8/ Non-treaty purse seines sockeye & pink fisheries released all chinook in areas 7,7A in 1998-2003; area 7 only in 1997.

9/ Does not include catches from extreme terminal area or river fisheries.

1995-2002 data sources:

N-T troll catch areas 3-4: PFMC Review Table A-13

N-T troll catch areas 1: PFMC Review Table A-25 South of Leadbetter

N-T troll catch area 2: PFMC ReviewTable A-13 catch + OR troll catch in Washington Areas 2-4 from ODFW

Treaty ocean troll catch by area: PFMC Review Table A-15

Sport areas 2-4: PFMC Review Table A-18

Sport area 1: PFMC Review Table A-28 South of Leadbetter

Treaty Juan de Fuca troll: Fish Ticket database

Juan de Fuca sport: PFMC Review Table B-39

Coastal Rivers sport & net: PFMC Review Tables B-27, 29, 30, 32, 33, 35, 36

Grays Harbor sport: PFMC Review Table B-25

Columbia River sport & net: PFMC Review Tables B-12 through 19

Grays Harbor net: PFMC Review Table B-25

Puget Sound net: Fisk Ticket database

Table 17. Preliminary 2003 landed COHO catches for Washington and Oregon fisheries of interest to the Pacific Salmon Commission. 1/

Note: Shaded cells denote years/areas where some type of mark-selective fishery occurred. Refer to footnotes 1/ and 2/ for details.

Fishery	2003 Preseason /2	2003 Preliminary Postseason	2002	2001	2000	1999	1998	1997	1996	1995
Ocean Fisheries										
Troll										
Cape Flattery & Neah Bay (Areas 4&4B) 3/	165,000	26,169	-	280	-	1,913	-	-	13,042	20,805
Quillayute (Area 3)			-	417	-	1,259	-	-	409	4,621
Grays Harbor (Area 2)			53	5,987	2,468	788	-	-	4,075	-
Col. R. (OR Area 2 and WA Area 1)			1,600	10,800	14,800	-	-	-	-	-
Sport										
Neah Bay (Areas 4 & 4B)	23,400	20,102	8,396	17,977	1,163	5,370	8,062	1,494	8,961	12,843
LaPush (Area 3)	5,750	3,462	1,652	3,310	1,926	2,577	577	1,057	1,611	1,891
Grays Harbor (Area 2)	83,250	39,268	19,081	69,396	28,794	12,595	7,694	13,155	23,073	28,885
Col. R. (OR and WA Areas 1)	112,500	106,411	59,400	116,700	39,600	27,100	6,500	16,900	24,800	36,400
Inside Fisheries										
Troll										
Strait of Juan de Fuca (Areas 4B, 5 & 6C) 3/	1,034	143	138	1	2	0	37	0	195	124
Sport										
Juan de Fuca (Areas 5 & 6) 4/	43,061	38,778	na	191,300	71,900	22,100	89,500	130,200	85,400	74,300
San Juan Islands (7)	na	na								
Puget Sound Sport (Areas 8-13 all year)	na	na								
North WA Coastal Rivers	na	na	19,194	29,393	18,097	17,213	7,722	527	11,993	6,877
Grays Harbor (Areas 2A-2D)	na	na	na	na	16,700	14,600	14,500	5,600	64,700	50,000
Columbia River Sport (Buoy 10)	37,000	54,800	6,205	132,038	21,478	8,861	3,175	20,357	4,537	5,026

Fishery	2003 Preseason \2	2003 Preliminary Postseason	2002	2001	2000	1999	1998	1997	1996	1995
Net										
North WA Coastal Rivers	na	44,654	72,376	69,309	30,074	45,486	20,036	4,218	38,295	16,934
Grays Harbor (Areas 2A-2D) 5/	na	17,666	na	17,000	3,200	3,900	2,300	1,600	7,200	9,700
Strait of Juan de Fuca (Areas 4B, 5 & 6C)	18,800	3,503	181,102	265,550	279,830	79,845	124,246	123,308	120,514	294,148
San Juan Islands (Areas 6, 7 & 7A)	22,432	651								
Puget Sound Marine (Areas 8 – 13) 7/	153,300	88,509								

Table 2. Preliminary 2003 landed COHO catches for Washington and Oregon fisheries of interest to the Pacific Salmon Commission.

Footnotes:

1/ Estimates represent landed catch only and do not include non-retention mortality. 2003 estimates include catches from January 1 through October. Wild coho release fisheries: 2003: sport Areas 1-4 release wild coho while open; 2001 sport ar 5 wild coho release 7/1-8/31; 2001 sport area 6 wild coho release 7/1-9/30; 2003, 2002, 2000 sport areas 5-6 wild coho releas 7/1-9/30; 1999-2003: sport areas 1-4 release wild coho when open; 1998: sport area 1 release wild coho when open.

2/ 2003 Nontreaty troll quota of 75,000 marked coho; treaty quota of 90,000 coho

3/ Includes Area 4B catch both during and outside the PFMC management period (May 1 – Sept. 30).

4/ 2003 & 2002 catches represent summer-only selective fisheries, since CRC annual estimates are not yet available. 2003 preseason estimate is for July-September period only.

5/ Includes catch from the upper Chehalis and Humptulips Rivers.

6/ San Juan Island non-treaty purse seine sockeye and pink fisheries release coho in 1998-2003; reef nets release unmarked coho 2001-2003.

7/ Does not include catches from extreme terminal area or river fisheries.

1995-2002 data sources:

N-T troll catch areas 3-4: PFMC Review Table A-13

N-T troll catch areas 1: PFMC Review Table A-25 South of Leadbetter

N-T troll catch area 2: PFMC ReviewTable A-13 catch + OR troll catch in Washington Areas 2-4 from ODFW

Treaty ocean troll catch by area: PFMC Review Table A-15

Sport areas 2-4: PFMC Review Table A-18

Sport area 1: PFMC Review Table A-28 South of Leadbetter

Treaty Juan de Fuca troll: Fish Ticket database

Juan de Fuca sport: PFMC Review Table B-39

Coastal Rivers sport & net: PFMC Review Tables B-28, 31, 34, 37

Grays Harbor sport: PFMC Review Table B-26

Buoy 10 sport: PFMC Review Table B-22

Grays Harbor net: PFMC Review Table B-26

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Preliminary Review of 2003 Washington Chum Fisheries of Interest to the Pacific Salmon Commission

November 21, 2003

This summary report provides a preliminary review of the 2003 chum fishing season and is subject to correction and revision as additional information becomes available. Some Washington chum fisheries are still underway, and catch and run size information provided are preliminary data reported through November 21. This report addresses in detail only those fisheries of concern under the Pacific Salmon Treaty. The mixed-stock fisheries in United States (U.S.) waters that are addressed in the Chum Annex of the Pacific Salmon Treaty are those in the western Strait of Juan de Fuca (areas 4B, 5 and 6C), the San Juan Islands (area 7) and the Point Roberts area (area 7A). Other chum fisheries in Washington waters are primarily terminal fisheries, which harvest runs of local origin.

Mixed Stock Fisheries

Areas 4B, 5, 6C

As in previous years, the chum fishery in areas 4B,5,6C was restricted to Treaty Indian gill net gear only. The fall chum fishery opened the week of October 12 and remained open 5 days per week until November 8.

Incidental catches of chum salmon occurred in fisheries for other species occurring prior to the fall chum management period. 399 chum were taken prior to September 16 (during the summer chum management period). Due to adverse weather conditions and poor prices, there was no effort and no catch during the fall chum fishing period.

No tissue samples for genetic analysis were collected from the 2003 fishery.

Areas 7 and 7A

Preseason forecasts were for a moderate return of fall chum in Puget Sound, however, in-season updates of abundance indicate many runs are much larger than the preseason forecast. This year Canada again implemented a fishery management scheme for Southern B.C. chum that deviates substantially from the "clockwork" stepped exploitation rates provided for in the Chum Annex of the PST. While some discussions are underway on developing a revised Chum Annex, no agreement was reached on new Annex language prior to the beginning of the 2003 fall chum fishery. Canada did not make a preseason forecast nor provide in-season updates of chum abundance. CDFO staff did indicate that chum abundance did not appear to be at a critical level that would necessitate severe fishery restrictions, and that it was their intent to mount Johnstone Strait fisheries consistent with a 20% exploitation rate. U.S. fishery managers communicated to Canada our intent to fish in areas 7 and 7A for a target of 120,000 chum, plus a portion of the underage due the U.S. from past seasons, and that the U.S. would begin its gillnet and purse seine fisheries at the normal start of the fall chum management period (week beginning 10/12).

Non-Treaty reef net fisheries targeting coho salmon were conducted following the end of Fraser Panel control, and fished through mid-October. A program to collect tissue samples for genetic analysis was in place for chum salmon caught between September 16 and September 30. 4,058 chum were harvested by the reef net fishery.

A Treaty Indian gillnet and purse seine fishery opened at the start of the fall chum management period with a two day fishery on October 13 and 14. The Non-Treaty fishery followed with one day of gillnet fishing on October 15 and one day of purse seine fishing on October 16. Due to extremely stormy weather the Non-Treaty fleet was unable to fish either day.

For the week beginning October 19, the Treaty Indian fishery went for three days from October 19 through October 21. The Non-Treaty fishery was also expanded to three days from October 22 through October 24, with both gillnet and purse seine gear fishing all three days. Again, adverse weather conditions off and on throughout the week hampered both fleets and effort was limited.

Given the poor results from the first two weeks, continued poor prices, and dwindling effort, the managers sought to maximize opportunity for the following week (week of October 26). The Treaty Indian fishery resumed on October 25 and continued through October 27. The Non-treaty fishery was reopened from October 28 through October 31. Following these openings the fishery was opened continuously for Treaty fishers from November 1 through November 21, and open for the Non-Treaty fleet Monday through Friday from November 3 through November 14. However, only a few fishermen continued to fish during this period.

There were 90 summer chum reported caught in areas 7 and 7A prior to September 16. These were taken incidental to sockeye and pink salmon fisheries. The total chum catch by all gears in areas 7 and 7A is reported, through late November, at 72,295 fish (Table 18).

Puget Sound Terminal Area Fisheries and Run Strength

Preseason forecasts for chum returns to Puget Sound were for a moderate fall chum run totaling about 1.25 million fish. Most Puget Sound chum runs have been updated in-season indicating overall returns significantly larger than expected preseason. Current in-season estimates are for a total Puget Sound chum run in excess of 2.0 million. Some Puget Sound chum fisheries are still underway, and additional in-season estimates of abundance may be made. At this time, spawning escapement estimates are not available.

Table 18. Preliminary 2003 chum harvest in selected Puget Sound catch reporting areas.

Week(s)	Areas 4B,5,6C Treaty Indian	Areas 7 & 7A Treaty Indian	Areas 7 & 7A Non-Indian	Areas 7 & 7A Total
Prior to 9/16	399	90	0	489
9/16 – 10/11	0	0	3,718	3,718
10/12 – 10/18	0	23,082	340	23,422
10/19 - 10/25	0	9,984	14,152	24,136
10/26 – 11/1	0	2,554	2,728	5,282
11/2 – 11/21	0	6,955	8,293	15,248
Season Totals	399	42,665	29,231	72,295

Season Review and Highlights, 2003

U.S. Fraser River Sockeye and Pink Salmon Fisheries

Introduction: The 2003 Fraser River Panel season was the fifth implemented under the renewed Annex IV of the Pacific Salmon Treaty (PST). The treaty establishes a bilateral (U.S. and Canada) Fraser River Panel (Panel) that develops a pre-season management plan and approves in-season fisheries within Panel Area waters directed at sockeye and pink salmon bound for the Fraser River (Figure 1). In partial fulfilment of Article IV, paragraph 1 of the PST, this document provides a season review of the 2003 U.S. Fraser River salmon fisheries as authorized by the Panel. Catch and escapement information for 2003 presented is considered preliminary and based on a Pacific Salmon Commission (PSC) staff update as of October 29, 2003 for sockeye salmon and as of November 4, 2003 for pink salmon.

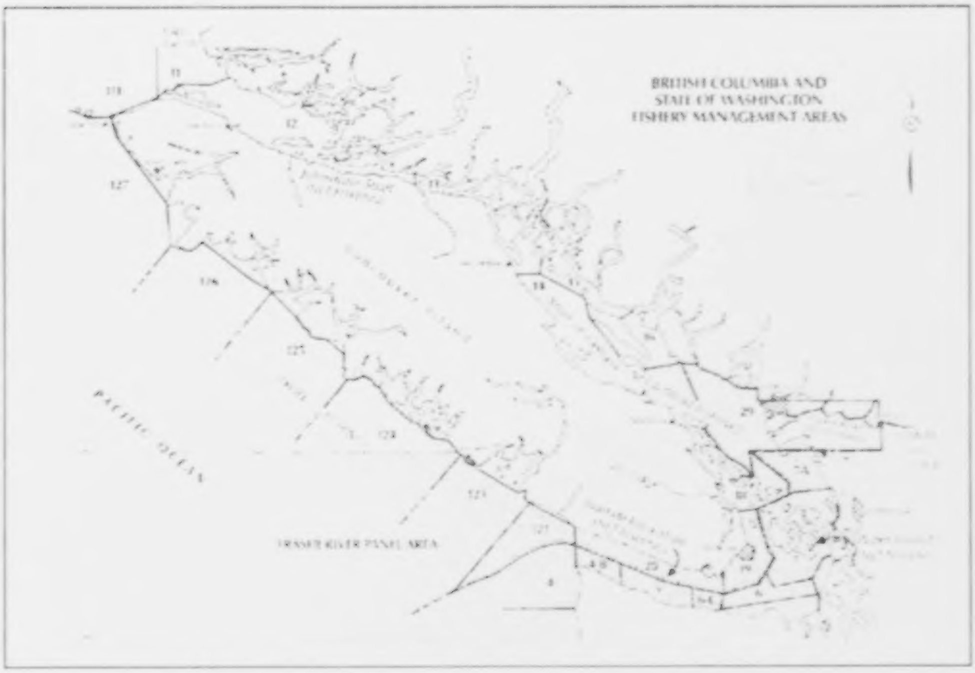

Figure 1. British Columbia and State of Washington Fishery Management Areas, 2003. The shaded area in the map represents the marine waters managed by the Fraser River Panel.

Pre-season Planning

The Department of Fisheries and Ocean, Canada (DFO) provided the Panel pre-season run size forecasts by stock group (run) at various probability levels. Table 19 shows the 2003 pre-season forecasts at the 50 percent probability level, which represents the mid-point of the range of possible run sizes.

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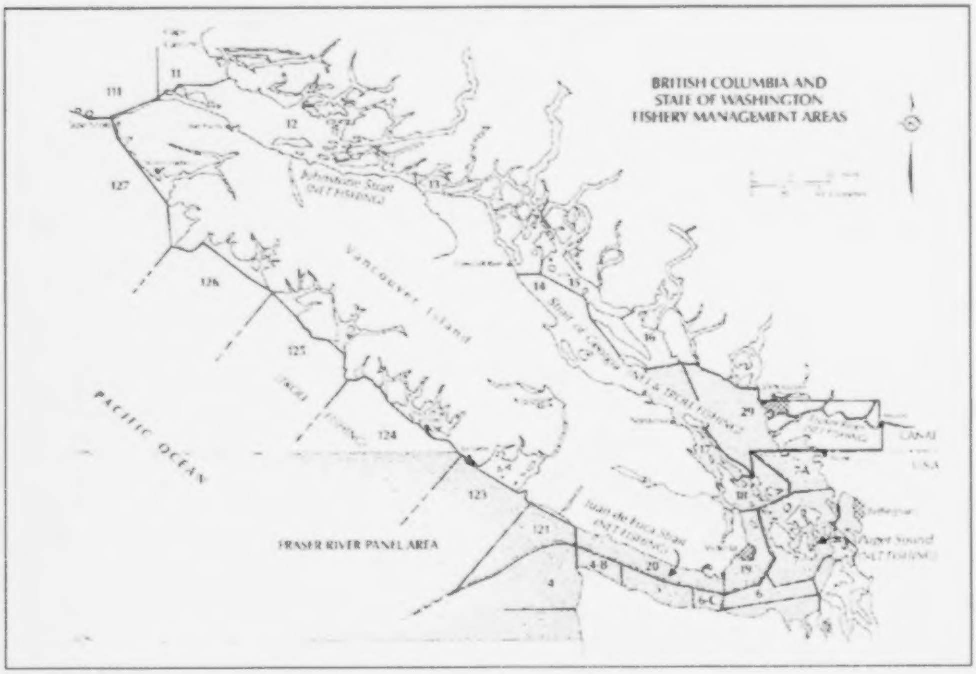

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Table 19. 2003 pre-season Fraser River sockeye forecasts at the 50 percent probability levels, by stock group.

Early Stuart	Early Summer	Summer	Late	Total
57,000	412,000	3,360,000	1,641,000	5,470,000

For management purposes the Late-run stock group forecast was separated into Birkenhead and "True Late" stock components (Table 20).

Table 20. 2003 pre-season Late-run sockeye component forecasts at the 50 percent probability levels.

Birkenhead	"True Late"	Late-run Total
322,000	1,319,000	1,641,000

The 2003 pre-season forecast for Fraser River pink salmon was estimated at 17,273,000 million at the 50 percent probability level.

The Panel's pre-season fishing plan assumed that 50 percent of Fraser River-origin sockeye that would migrate back to the river through Johnstone Strait, rather than via the Strait of Juan de Fuca (Figure 1), referred to as a 50 percent northern diversion rate. Subsequently, DFO updated this assumption by predicting that this Johnstone Strait diversion rate would be 64 percent, based on a model that used mean sea surface temperatures measured at Kains Island for April and May of 2003 (memorandum from Al Cass, Stock Assessment Division, DFO, dated July 9, 2003).

The Panel remained concerned during the 2003 pre-season planning process with the abnormal early entry into the river of "True Late" sockeye observed since 1996. This early entry behavior had resulted in high (over 90 percent in 2000) en route and pre-spawn mortality rates, and posed a significant threat to the future viability of the Late-run stock group. The Panel assumed that this early entry behavior would continue in 2003 and agreed to True Late sockeye salmon conservation objectives described in Table 21.

During 2003 pre-season planning, the Panel assumed a September 12, 50 percent migration date past the Mission sonar site on the lower mainstem Fraser River (Figure 1) and an associated expectation of a 47 percent en-route mortality rate for True Late sockeye salmon. These conditions equated to a 25 percent allowable True Late maximum exploitation rate.

Table 21. Management objectives for in-season management of True Late sockeye salmon (source: 2003 Fraser River Panel pre-season plan).

If	In-river Mortality Rate on True Late greater then 47% ***Or*** Abundance less then 50% probability level:	In-river Mortality Rate on True Late less then 47% ***And/Or*** Abundance greater then the 50% probability level:
Then	Exploitation Rate will be reduced from 25% down to a range between 15% and 25% based on the Canadian escapement target.	Considerations will be given to increasing the exploitation rate to levels exceeding 25% consistent with meeting Canada's True Late escapement targets.

Summer-run sockeye salmon were expected to provide most of the sockeye harvest in 2003. However, the overlapping run timing of Summer-run and Late-run had some likelihood of presenting challenges to the harvest of summer-run sockeye while keeping impacts on True Late sockeye salmon within the limits as defined by the Panel. Nevertheless, based on pre-season run size and timing assumptions, the Panel developed a pre-season management plan that projected the U.S. could harvest its share of the total allowable sockeye catch of the forecasted surplus of Summer-run sockeye salmon while conserving True Late sockeye salmon.

The Panel also recognized during the pre-season planning process that conservation concerns for True Late sockeye could also constrain pink salmon harvest opportunity due to run timing overlaps. The Panel's 2003 pre-season fishing plan anticipated that U.S. pink salmon directed fisheries would not begin until True Late sockeye largely cleared U.S. marine waters.

In-Season Run Assessment, 2002:

The 2003 in-season estimated return of 5,390,000 sockeye salmon was 99 percent of the pre-season forecast (Table 22). Summer-run stock groups returned at 95 percent of the pre-season forecast, while actual Late-run stock group (which includes Birkenhead stock) abundance was 96 percent of the pre-season forecast (Table 22).

In 2003, more sockeye salmon approached the Fraser River through Johnstone Strait than assumed or forecasted pre-season. The Northern Diversion rate in 2003 is estimated in-season to have been approximately 70 percent, greater than the DFO's pre-season forecast of 64 percent and the Panel's pre-season fishery plan modeling assumption of 50 percent, which was used during the pre-season planning. The higher than forecasted diversion rate resulted in less fish available to U.S. fisheries than anticipated pre-season.

A record return of 26 million Fraser River pink salmon was estimated in 2003, which was 151 percent of the pre-season forecast (Table 22). Similar to sockeye salmon, more pink salmon approached the Fraser River through Johnstone Strait than forecasted pre-season.

Table 22. Comparison of pre-season vs. in-season abundance estimates for Fraser River sockeye and pink salmon by stock group (run).

Stock Group (Run)	Pre-season 50% Probability Forecast	In-Season Run Size Estimate	Comparison: In-Season vs. Pre-Season Forecast
		Sockeye Salmon	
Early Stuart	57,000	30,000	53%
Early Summer	412,000	585,000	142%
Summer	3,369,000	3,200,000	95%
Late	1,641,000	1,575,000	96%
Total	5,470,000	5,390,000	99%
		Pink Salmon	
Fraser River	17,273,000	26,000,000	151%

In-Season Harvest Estimates, 2003:

The 2003 preliminary estimates of Fraser River sockeye and pink salmon catches are presented in Table 23 and Table 24, respectively. The preliminary total U.S. commercial and treaty Indian ceremonial and subsistence harvest in 2003 was 243,800 sockeye and 773,100 pink salmon.

As mentioned earlier, the Panel made pre-season assumptions about expected 2003 True Late sockeye early migration behavior. On Friday, August 15, the PSC staff expressed concern that the initial pattern of the True Late sockeye entry into the Fraser River was indicating the potential for an even earlier 50 percent migration date past Mission than the pre-season assumption of September 12.

On Tuesday, August 19, the PSC staff advised the Panel that it would be making a formal recommendation later in the week for an earlier 50 percent True Late sockeye salmon migration date past the Mission sonar site. The PSC staff further advised the Panel that pursuant to the Panel's pre-season plan, that this recommendation would most likely equate to a 15 percent maximum allowable exploitation rate for True Late sockeye salmon. The PSC staff also noted on August 19, that both the U.S. and Canada had already exceeded their respective shares of this maximum 15 percent exploitation rate. Accordingly, on August 19, the U.S. confirmed its closure of its commercial fisheries as previously scheduled by the Panel, with no additional commercial openings proposed.

Table 23. Preliminary 2003 Canadian and U.S. catch estimates of Fraser River sockeye salmon.

Fishery	/Area	Gear		Preliminary Sockeye Salmon Catch Estimate [1]
Commercial Catch: Canada				
A & C	Areas 1-10	Net		0
F	Areas 1-10	Troll		0
G	Areas 123-127, 11-12	Troll		0
B	Areas 11-16	PS		472,800
D	Areas 11-16	GN		167,100
H	Areas 12-16	Troll		127,100
H	Areas 18-29	Troll		0
B	Area 20	PS		6,000
E	Area 29	GN		259,200
Selective Fisheries				12,500
		Canadian Commercial Total:		1,044,700
Commercial Catch: United States				
Alaska		Net		0
Washington				
	Treaty Indian (T.I.) Areas 4B/5/6C	Net		34,500
	T.I. Areas 6/7/7A	Net		124,900
Treaty Indian Sub-Total:				159,400
	Non-Indian (N.I.) Areas 7/7A			
		Purse Seine	49,000	
		Gill Nets	29,000	
		Reef Nets	8,000	
Non-Indian Sub-Total:				84,000
		U.S. Commercial Total:		243,400
Non-commercial Catch:				
PSC Test				41,600
Other Test				65,600
Fraser River Aboriginal				571,800
Areas 12-124 Aboriginal				217,500
Recreational				65,200
Charter				600
U.S. TI Ceremonial				400
		Canada and U.S. Non-commercial Total:		962,700
		U.S. Commercial and Non-commercial (Ceremonial) Total:		243,800
		Canada and U.S. Sockeye Salmon Harvest Total:		2,250,800

1 Row and columns may not add-up due to rounding errors.

Table 24. Preliminary 2003 Canadian and U.S. catch estimates of Fraser River pink salmon.

Fishery	[2]Area	Gear		Preliminary Pink Salmon Catch Estimate [1]
Commercial Catch: Canada				
A & C	Areas 1-10	Net		0
F	Areas 1-10	Troll		0
G	Areas 123-127, 11-12	Troll		1,000
B	Areas 11-16	PS		705,000
D	Areas 11-16	GN		16,000
H	Areas 12-16	Troll		76,000
H	Areas 18-29	Troll		1,000
B	Area 20	PS		4,000
E	Area 29	GN		14,000
Selective Fisheries				12,000
		Canadian Commercial Total:		829,000
Commercial Catch: United States				
Alaska		Net		0
Washington				
	Treaty Indian (T.I.) Areas 4B/5/6C	Net	38,000	
	T.I. Areas 6/7/7A	Net	283,000	
Treaty Indian Sub-Total:				321,000
	Non-Indian (N.I.) Areas 7/7A			
		Purse Seine	398,000	
		Gill Nets	8,000	
		Reef Nets	45,000	
Non-Indian Sub-Total:				452,000
		U.S. Commercial Total:		773,000
Non-commercial Catch:				
PSC Test				29,000
Other Test				14,000
Fraser River Aboriginal				293,000
Areas 12-124 Aboriginal				0
Recreational				64,000
Charter				0
U.S. TI Ceremonial				100
		Canada and U.S. Non-commercial Total:		400,000
		U.S. Commercial and Non-commercial (Ceremonial) Total:		773,100
		Canada and U.S. Pink Salmon Harvest Total:		2,002,000

1 Row and columns may not add-up due to rounding errors.

On Friday, August 22 the PSC staff formally recommended a 50 percent migration date for the True Late run past Mission of August 27, which corresponded to an expected en route mortality of 84 percent. The Panel adopted the PSC staff's recommendation, and the corresponding 15 percent maximum allowable exploitation rate on True Late sockeye (see Table 20 above). The U.S. and Canada had already exceeded their respective shares of a 15 percent exploitation rate on True Late sockeye salmon by this date. The U.S. Panel members reiterated its intent to be consistent with the Panel's pre-season fishing plan and not schedule any additional fisheries directed on sockeye salmon.

Besides the reduction of the allowable exploitation rate on True Late sockeye from pre-season expectations, the in-season management of the 2003 return was further complicated by the timing of the Summer-run and Late-run sockeye salmon stock groups. The peak timing of the Summer-run return in 2003 was near the long term average of August 7 (Area 20 timing). However, the True Late run was two days earlier than the timing assumed in pre-season modeling (August 15 instead of August 17). In 2003, these two runs had a 7-day separation (instead of the forecasted 10-day separation) in their run timing separation in U.S. marine waters. The timing separation between True Late run sockeye and pink salmon was also less than anticipated. In 2003, the pink salmon return through marine waters was six days earlier than forecasted (August 25 instead of August 31).

In summary, a number of factors prevented the U.S. from utilizing its entire sockeye salmon Total Allowable Catch (TAC) in 2003: (1) conservation concerns for True Late sockeye; (2) higher than anticipated timing overlap between the Summer-run and Late-run sockeye salmon; and (3) and the higher than anticipated northern diversion rate. As a result, an estimated 114,600 sockeye salmon of the 358,000 U.S TAC remain unharvested (Table 7). The U.S. harvest of True Late sockeye exceeded the True Late TAC by 16,500 (Table 26)

Table 25. Preliminary 2003 U.S. catch estimates of Fraser River sockeye salmon compared to the U.S. Total Allowable Catch (TAC). (Note: The distribution of U.S. TAC by stock group shown below is based upon relative abundance of stock groups and is displayed for illustrative purposes only).

	Early Stuart	Early Summer	Summer	Late	Total
U.S. Total Allowable Catch (TAC)	0	26,300	279,000	52,700	358,000
2003 Catch	0	32,100	157,200	54,100	243,400
TAC Remaining	0	- 5,800	121,800	- 1,400	114,600

Table 26. Preliminary 2003 U.S. catch estimates of Fraser River Late-run sockeye salmon catch compared to the U.S. Total Allowable Catch (TAC). Note: The distribution of U.S. "Late-run TAC" by stock component shown below is based upon relative abundance and displayed for illustrative purposes only).

Late-run:	Birkenhead	"True Late"	Total
U.S. Total Allowable Catch (TAC)	37,100	15,600	52,700
2003 Catch	22,000	32,100	54,100
TAC Remaining	15,100	- 16,500	- 1,400

A higher than anticipated northern diversion rate, earlier than forecasted run timing, low catch rates, poor markets, and low effort all contributed in preventing the U.S from accessing its entire TAC of pink salmon in 2003. A total of 3,919,900 pink salmon of the 4,693,000 U.S. TAC remain unharvested (Table 26). The U.S. catch of Fraser River pinks was only 16.5 percent of its TAC.

Table 27. 2003 U.S. catch estimates of Fraser River pink salmon compared to the U.S. Total Allowable Catch (TAC).

Pink Salmon	
U.S. Total Allowable Catch (TAC)	4,693,000
2003 Catch	773,100
TAC Remaining	3,919,900

2003 Escapement Estimates:

Final post-season spawning escapement estimates are not available at this time. The preliminary 2003 gross escapement estimate of Fraser River sockeye salmon by stock group ranged from 85 to136 percent of targets (Table 27). Gross escapement is defined as the number of fish estimated to have entered the mouth of the Fraser River. For sockeye salmon, gross escapement is determined in-season by combining the sonar passage estimate at Mission with the First Nation (FN) harvest below Mission. Actual estimates of sockeye spawning escapements (compared to gross escapements) by stock will be affected by en route and pre-spawning mortality, harvest levels above Mission, and the accuracy/precision of the various in-season abundance and racial analyses.

Table 27. Preliminary 2003 gross escapement of Fraser River sockeye salmon by run

Run	In-Season Adjusted Gross Escapement Target	Escapement		Gross Total Escapement	Percent Of Target
		Above Mission	FN Below Mission		
Early Stuart	29,000	29,000	0	29,000	100%
Early Summer	452,000	370,000	14,000	384,000	85%
Summer	1,635,000	2,087,000	135,000	2,222,000	136%
Late	1,287,000	1,120,000	47,000	1,167,000	91%
Total	3,403,000	3,606,000	196,000	3,802,000	111%

The preliminary 2003 gross escapement estimate of Fraser River pink salmon was approximately 24.3 million, or 311 percent of the 2003 gross escapement target (Table 28).

Table 28. Preliminary 2003 gross escapement of Fraser River pink salmon.

In-season Run Size Estimate	U.S. and Canada Catch [1]	Estimated Gross Escapement	Gross Escapement Target	Percent of Target
26,000,000	1,688,000	24,312,000	7,810,000	311%

[1] Catch does not include an estimated 314,000 pink salmon taken within the Fraser River.

D. 2003 UPDATE REPORTS FOR SALMONID ENHANCEMENT PROGRAMS IN THE UNITED STATES AND CANADA

The Pacific Salmon Treaty between Canada and the United States requires that information be exchanged annually regarding operation of and plans for existing enhancement projects, plans for new projects, and views concerning the other country's enhancement projects. In 1988, a committee was formed to develop recommendations for the pre- and post-season and enhancement report formats. In summary, the committee proposed that:

- detailed reports on existing enhancement facilities of the type produced in 1987 be prepared every four years;
- the Parties will annually update information on eggs taken, fry or smolt released and adults back to the facility; significant changes in facility mission or production will be highlighted in narratives; and
- the Parties will provide periodic reports through the appropriate panels on new enhancement plans.

1. 2002 ANNUAL REPORT ON THE SALMON ENHANCEMENT ACTIVITIES OF THE UNITED STATES

The Pacific Salmon Treaty provides that, "2. Each year each Party shall provide to the other Party and to the Commission information pertaining, *inter alia*, to: (a) operations of and plans for existing projects; (b) plans for new projects;..."(Article V). The United States provided a report dated January 31, 1990 to Canada that combined under one cover all pertinent biological data for United States enhancement projects with a detailed account of plans for new projects. The 2001 Annual Report incorporates updated information through the end of the 2001 calendar year for releases, numbers of adults returning to hatcheries, and the number of eggs taken.

Information is organized by hatchery managing agency or region, and by brood year of releases or calendar year of returns and egg takes. Each agency is to report:

1. New production
2. Losses of production
3. Major trends in production
4. Brood year releases of juveniles by facility
5. Calendar year returns of adults to enhancement facilities
6. Calendar year takes of eggs by facility

Agencies in Washington, Oregon and Idaho face the challenge of coordinating enhancement activities with recovery actions for endangered species. Recovery actions regarding enhancement activities will also lead to changes in the abundance of fish available for ocean fisheries.

SOUTHEAST ALASKA

State-operated and Private Non-profit Fish Hatchery Production

New Production

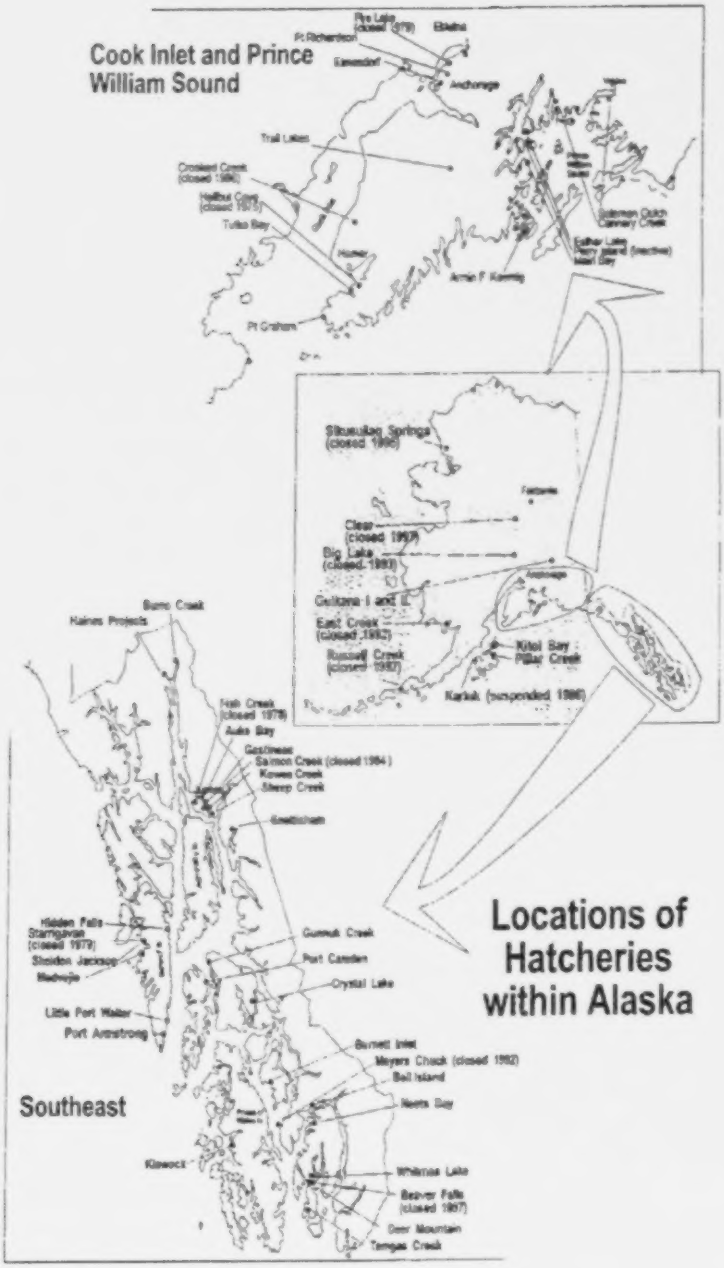
In general, hatchery operators in Southeast Alaska continued to maintain maximum permitted production from their facilities. There have been several permit alterations allowing for increases of production numbers: a one million egg increase in permitted coho production (from re-establish the production of summer chum salmon – 30 million eggs – at the Port Armstrong Hatchery located on Baranof Island; and 150,000 egg increase in permitted chinook production at the Macaulay Hatchery in Juneau (formerly the Gastineau Hatchery). The only instance of increase in actual production of broodyear 2002 fish was at the Macaulay Hatchery, where 154,000 Tahini stock chinook eggs were taken in 2002, up from the 100,000 Tahini stock chinook eggs taken in 2001.

Loss of Production

There was no loss of production in hatchery operation in Southeast Alaska. Normal variation in brood stock abundance has resulted in minor fluctuations in annual production from some Alaskan hatcheries.

Trends in Production

Most private non-profit hatcheries in Southeast Alaska are at or near their permitted capacities. Returns to Alaskan hatcheries fluctuate annually as the result of varying marine survival rates caused by the natural variations in the marine environment. The adult return rate from the production of hatchery Chinook salmon was low, while adult return rates from the production of chum salmon and coho salmon were high in 2002. The marine survival rate for Chinook salmon production from Southeast Alaska has been low for the last decade, and is likely due to unfavorable marine conditions for that species. The marine survival rates for both chum and coho salmon production have been increasing in recent year, likely due to favorable marine conditions for those species.



Locations of Hatcheries within Alaska

WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

New Production

No significant new production capacity has been added in Washington State.

Loss of Production

Federal budget reductions for the Mitchell Act mitigation program have not resulted in closure of any additional facilities in the lower Columbia River. State funded facilities and programs have been reduced due to budget reductions and the recommendations of the Hatchery Scientific Review Group. ESA concerns, fish health policy constraints, and losses in state funding have resulted in minor reductions to chinook, coho, and steelhead production.

Trends in Production

For the short term, production levels are expected to continue on a downward trend. In recent years, budgetary issues have been the dominant factor in changing production levels. The decrease in the Mitchell Act program is the most obvious example of budget driven program changes; however, state funding levels have been variable as well. The full impact of the ESA listing of salmon and steelhead are unknown at the present time; changes in hatchery operations are occurring as a result of a review by the Hatchery Scientific Review Group and ESA. The ultimate level of the Washington Department of Fish and Wildlife's annual fish production program is unknown.

TREATY TRIBES OF WESTERN WASHINGTON

Reported by: The Northwest Indian Fisheries Commission

New Facilities and Production

No new tribal facilities went into operation in 2002. However there were increases in production over the past two years. The majority of these increases were in chum production. These increases were due to strong adult returns to hatcheries resulting in most programs meeting egg take goals.

Loss of Production

There were no significant losses in tribal production in 2002.

Overall Production Trends

Trends in tribal fish production are listed in Table 1. Beginning in 1985, tribal production consistently resulted in releases of salmon and steelhead in excess of 40 million fish. Release year 2002 marked a return to a trend of releases in excess of 40 million after 2 years of reduced quantities of salmon being released. Production trends are not anticipated to increase beyond current levels. In the immediate future, predictions suggest marine conditions should be favorable for salmon survival in Western Washington. This should hopefully result in an adequate number of adults returning to tribal hatcheries to meet egg take goals.

Table 1. Hatchery Releases for Western Washington Tribes (1,000's of fish). Release numbers include tribal cooperative projects with state, federal and private organizations.

Release Year	Fall Chinook	Spring/ Summer Chinook	Sub-yearling Coho	Yearling Coho	Chum	Pink	Sockeye	Sub-yearling Steelhead	Yearling Steelhead	Total
1986	11,632	237	2,893	7,536	22,380	0	240	1,159	1,242	47,319
1987	11,080	133	2,584	6957	23,470	0	12	932	978	46,246
1988	13,094	476	1,699	8,150	21,092	882	133	577	905	47,008
1989	12,102	682	2,364	8,033	20,221	0	200	398	872	44,872
1990	14,212	659	1,269	7,693	14,981	110	0	353	821	40,098
1991	15,465	446	2,194	9,458	14,887	0	12	769	903	44,134
1992	12,847	1,105	3,800	11,589	12,417	46	48	339	686	42,877
1993	10,459	900	2,781	8,635	14,167	0	46	144	1,190	38,322
1994	12,125	1,282	1,385	8,444	14,257	0	171	159	847	38,670
1995	14,758	1,376	633	11,243	19,474	0	57	411	1,011	48,963
1996	16,041	1,077	534	9,611	12,595	200	69	1,162	171	41,460
1997	15,203	1,217	1,523	9,449	11,104	0	266	275	916	39, 957
1998	13,252	1,898	627	12,278	11,425	45	188	366	866	40,925
1999	12,510	1,498	741	10,495	16,050	0	69	208	978	42,549
2000	12,569	1,752	560	9,869	7,392	34	258	152	922	33,508
2001	9,471	1,637	524	7,544	9,019	0	1,126	122	776	30,218
2002	12,501	2,232	978	8,453	15,067	0	1,255	198	721	41,495

OREGON DEPARTMENT OF FISH AND WILDLIFE

New Fish Production

There were no new anadromous fish production programs in 2002 and none are expected in the near future due to lack of funding.

Major Trends

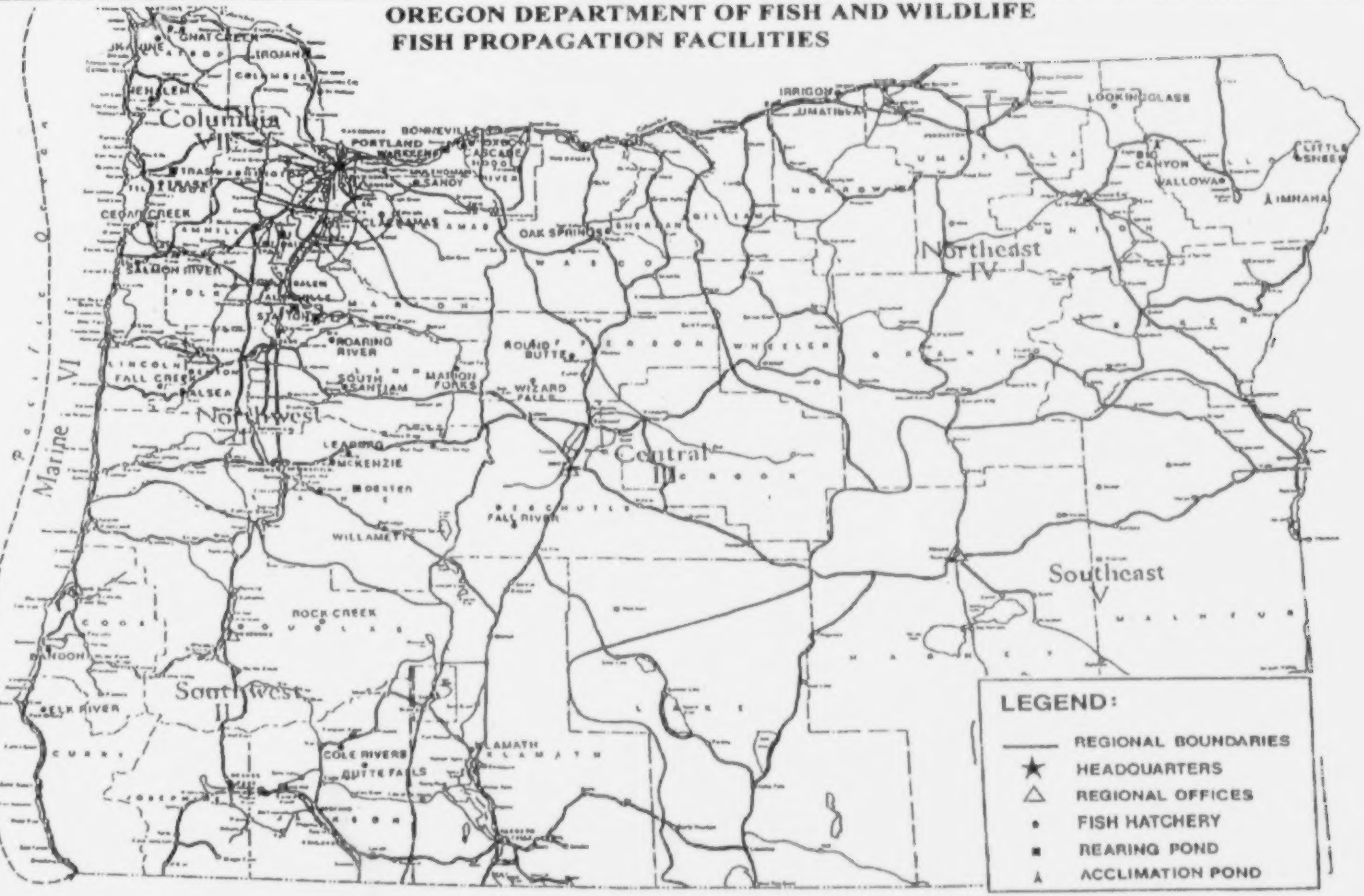
State of Oregon budget problems continue to result in hatchery programs being targeted for closure. This year a projected surplus in license sales dollars allowed the state to maintain operations at 4 coastal hatcheries that were targeted for closure due to a reduction in state general fund dollars. Federal Mitchell Act Program funding shortfalls could also impact hatchery production in the next few years. A Mitchell Act Program reform package is being submitted again to NOAA Fisheries (Department of Commerce) requesting increased funding to implement new hatchery reform measures and to construct new acclimation sites in the upper Columbia River Basin to enhance survival and reduce straying of specific release groups of hatchery reared fish.

Implementation of the Oregon Plan for Salmon and Steelhead is continuing, emphasizing natural production areas, habitat improvements and cooperative programs to increase naturally produced fish in coastal watersheds. Funding for new innovative hatchery practices is being sought to explore supplementation of diminished populations of coastal salmon and steelhead.

Negotiations by the co-managers continue for the renewal of the Columbia River Fish Management Plan under the US v. Oregon settlement agreement, which expired at the end of 1998.

The summer drought in 2002 resulted in very low water flows and elevated water temperatures at many ODFW hatcheries. This then caused an increase in disease epizootics at several hatcheries, which will reduce smolt release numbers in a number of programs, particularly summer steelhead programs in the Willamette River Basin. The Idaho sockeye program at Bonneville Hatchery has been terminated because of an IHN virus epizootic and reduced water flow available from the well field that the hatchery uses for fish production. IHNV was more prevalent than usual in the Columbia River Basin this year.

OREGON DEPARTMENT OF FISH AND WILDLIFE
FISH PROPAGATION FACILITIES



IDAHO DEPARTMENT OF FISH AND GAME

New Production

New production includes increased Summer Steelhead production at Clearwater Fish Hatchery for the 2003 brood year to help meet the LSRCP mitigation goals for the Clearwater River Drainage. Captive brood and rearing programs continue at the Eagle Fish Hatchery for both Chinook and Sockeye Salmon. A variety of research continues to be undertaken including cryopreservation of sperm on selected chinook stocks, supplementation studies, and supplementation studies at various Idaho facilities.

Production

In Brood Years 2000-2001, spring and summer Chinook salmon brood escapements and egg takes approached full production levels. Smolt releases will be near full capacity at several stations. The 2002-03 Brood Years are expected to be up some for spring and summer chinook returning to the Clearwater River, South Fork of the Salmon River, and Rapid River, and the upper Salmon River is expected to be at or near hatchery goals. Water conditions look to be on the decline again with future hatchery production very much dependent upon good water conditions.

Trends in Production

Hatchery production along with natural production have some upward trends due to good out migration conditions with sufficient water flows to aid smolt survival to the ocean. Good ocean conditions have improved some adult survival and abundant stream flow conditions have allowed some hatchery runs to rebound slightly, but are expected to continue to decline over time due to migration corridor constraints. Wild and naturally produced fish continue to hang on but there is little optimism for full recovery in the near future.

UNITED STATES FISH AND WILDLIFE SERVICE

Trends in Production

US Fish and Wildlife Service production continues at around 39 million fish released per year.

2. 2003 ANNUAL REPORT ON THE SALMONID ENHANCEMENT ACTIVITIES OF THE UNITED STATES

This report had not been received by March 31, 2004.

3. 2003 REPORT ON THE SALMONID ENHANCEMENT PROGRAM IN BRITISH COLUMBIA

The Pacific Salmon Treaty between Canada and the United States requires that information be exchanged annually regarding: operation of and plans for existing enhancement projects, plans for new projects, and views concerning the other country's enhancement projects. This report summarizes significant changes to the enhancement program since the previous report.

SIGNIFICANT CHANGES IN PROGRAM

Since 2001, the organizational structure for Fisheries and Oceans Canada has been area-based. This structure integrates enhancement activities with programs from other sectors under local direction and delivery. Regional Headquarters continues to play a role in ensuring consistent program delivery between areas and in the development of standards and guidelines.

SOUTH COAST

East Coast Vancouver Island

BIG QUALICUM: Chum escapement in 2003 was higher than expected but below target. Despite this shortfall, a high female ratio combined with low egg retention resulted in good egg deposition in both the spawning channel and the river. The Chinook return remains steady and targets for hatchery and river production were easily attained. Although Coho counts were lower than in recent years, which was typical of most east coast Vancouver Island stocks in 2003, the return was sufficient to sustain a good recreational harvest and achieve production goals.

LITTLE QUALICUM: Chum escapement to the Little Qualicum system was also higher than expected and the spawning channel egg deposition target was achieved. Chinook returns were strong once again, contributing to an increasingly popular terminal sport fishery while also achieving in stream and hatchery production targets. This is the second year of an ongoing habitat complexing program undertaken on the Little Qualicum River. Funded by the "Habitat Conservation Trust Fund" this project will benefit all species but is primarily intended to improved rearing habitat for endangered steelhead. Serious flooding in October 2003 diverted the river through farm land upstream of the spawning channel. Resulting sedimentation will likely reduce egg to fry survival in the lower reaches and create future restoration challenges.

CHEMAINUS: Enhancement of chinook was re-established in 2002 in response to depressed returns. The run was low and late. A strategy was in place to restrict brood collection to 30% of the run. Approximately 100k eggs were collected, with half being reared at Nanaimo Hatchery and half at Seasprings Salmon Farm.

PUNTLEDGE: Although Summer Chinook returns were down compared to the previous two years, they were still slightly above the 10 year average. The result was the inability to attain this years egg target. The Captive Brood program at Rosewall Creek Facility once again provided 1 million eggs to support this depressed run. Fall Chinook returns continue to improve and were strong enough to support a fishery in area 14-11 as well as an in-river, retention fishery. This is the first time in 40 years that the Chinook fishery has been open in the river. The Fall Chinook egg targets were easily collected for the third consecutive year. Coho returns were fair, but lower than in recent years. Pink returns were strong as this was an even year cycle. Puntledge and Tsolum facilities were supplemented with pink eggs from Quinsam Hatchery leaving most of the returning adults to spawn naturally in the rivers. A strong return of Chum ensured a commercial fishery off the Comox Bar. Chum were also targeted by sport fishers in the river. The Chum egg target was again easily attained.

West Coast Vancouver Island

CONUMA: The hatchery was not able to achieve Chum egg targets for Tlupana, Conuma (the main production river) and Canton; however escapements and egg takes to Sucwoa and Deserted were the best in years (after years of extra effort on these). Chinook escapement to Conuma where the highest ever, even after a good sport fishery and the first commercial fishery in a very long time. The Conuma hatchery also enhanced Gold, Muchalat and Burman chinook since the Gold River PIP Hatchery was still not operating. Chinook targets were met for Burman but not Gold. The Gold River eggs were kept in separate trays until otolith readings could give the origin of the broodstock, due to concerns the previous year about straying from Robertson Creek Hatchery. This year all the females were otolith marked Robertson hatchery origin while all the males were unmarked. The present decision is to release juveniles as small fry into the upper Gold River. All chinook and chum stocks were otolith marked. Conuma Chinook eggs were again given to the Zeballos River PIP Hatchery. Coho escapements to Conuma were very good and production targets were met.

NITINAT: The Chum return was excellent with good catches to the terminal commercial fishery and good escapement numbers to the inside of the lake. Egg targets were met and the river had a very good spawn, with high water ensuring a broad distribution of spawners. Nitinat Chinook returns were above expectations and well above last years numbers, with 40,000 returning. Sarita River also had good returns with 4,000 chinook returning to the river. Hatchery targets for both Nitinat and Sarita Chinook stocks were easily met. Coho escapement numbers were also good with over 30,000 coho returning to Nitinat. Coho egg targets were easily met.

ROBERTSON CREEK: The chinook return to the Stamp River continues to be excellent. Hatchery egg targets were easily reached with the vast majority of the run made up of age 3 and 4. Both thermal and coded-wire tag marking continue for Stamp chinook. Chinook returns to Nahmint River improved as well and that egg target was also reached. Coho returns to the Stamp were again very good and the production target was easily attained. All brood coho were marked with an adipose clip to facilitate hatchery mark-selective fisheries. As a coho indicator stock, coded-wire tag + adipose clip and coded-wire tag only groups are also released. The hatchery continues to be responsible for applying fertilizer to Great Central Lake continuing the program initiated in the mid-1970's to improve sockeye productivity.

CENTRAL COAST

Northeast Vancouver Island

HOMALCO: Summer chum returns to the Orford River were very strong in 2003, in excess of 60,000. A further 20,000 chum were taken in commercial gillnet opportunities in Bute Inlet (first fishery in over 10 years). About 1.5 million summer chum eggs were taken over the timing of the run. DNA baseline samples were taken from both the Orford River and its main tributary, Algard (Clear) Creek, as well as from the brood used for egg takes. Incubation survival has been very good to date. The hatchery fall chum component for 2003 was not taken due to a very small run. Preliminary coho returns were estimated at around 400 adults; the hatchery did not take coho brood. A small number of 2002 Brood Coho (~45,000) are doing very well and on target for release in May 2004.

QUINSAM: Chinook adult escapement met the escapement target for the Quinsam River, (preliminary estimate of 6,245), but was down significantly by 42% from 2002 return. The same trend occurred on the Campbell, (preliminary estimate of 569 adults), where escapement was down 43% from last year. Preliminary age class information from rack CWT sample shows 25% -5 yr olds, 56%- 4's, 17%-3's, and 2%-2's. Although data is still preliminary, it is clear that escapement is down, indicating reduced survival and/or higher catch. Note that all returns this year from hatchery production were otolith marked. An early flood in October caused the fence to be pulled which allowed uncounted adults above. Estimates were made to fill in the missing week.

The Quinsam River Coho return met the lower end of escapement target, (18,000), but was down from last year by an estimated 10%. It should be noted that a more extensive mark-selective fishery in the ocean and river may have affected the numbers of adults returning, but with no accurate creel survey for the river, catch can only be guessed. Coho jacks were down significantly for the second year in a row, (55% of last year, preliminary estimate of 1,500), which is of concern. The early flood in October caused the fence to be pulled which allowed uncounted adults above. Estimates were made to fill in the missing week.

Quinsam Pink return met escapement target at an estimated 102,000 adults, down from 113,000 in 2002. Adult migration was again limited in the upper Quinsam because of low September flows, and adult passage problems were present at cascades 12 km above the hatchery, which is estimated to have limited 90% of the run to the lower river. This on-going problem is being reviewed for potential mitigation. Up to 8 million Quinsam Pink eggs were again taken to stock systems in the south coast from Puntledge to Nanaimo river.

Chum escapement to the Campbell River system was good, with an estimated return of 20,000 adults. This is down from last year, but still indicates successful re-building due to habitat restoration work in the Campbell (gravel).

The hatchery continues to be involved with the community and B.C. Hydro to improve water flow control and productivity of the Campbell River system. Although restoration projects did not occur in the watershed this year, a report was written to summarise all Campbell River restoration work to date and set a plan for the future. This will guide and legitimise work that could occur in the proceeding years if funding and approvals are obtained. Plans to mitigate fish passage problems on low flows in the Quinsam were also started. This involves partnerships with Timberwest, Haig-Browne Institute, DFO, and Pacific Salmon Foundation. If the funding can be obtained, fishways will be made in the upper Quinsam River which will allow passage for adult salmon to over 14 km of under-utilised habitat which is currently restricted when flows in the river are below 100 cfs.

Central Coast Mainland

SNOOTLI: All targets were obtained except for Wannock River chinook (28% of target) because of poor adult returns. There were extremely strong returns of adult chum in 2003, more than double target escapement. Pink runs returned just slightly below the target of 1 million.The number of returning chinook was below target escapement for the second year in a row. The hatchery was again heavily involved in a project to determine feasibility for Atnarko River chinook as a index stock for Central Coast chinook stocks. Indications are that the Atnarko chinook stock is a suitable candidate for future assessment projects. The hatchery continues to support assessment and enhancement efforts for Rivers Inlet chinook stocks. The coho escapement in the past year appeared to be quite healthy, exceeding the brood year escapement. Rivers/Smith Inlet Sockeye – 2003 egg targets were identical to 2002. Enhancement efforts planned for Long lake stocks (Smokehouse,Canoe) were cancelled due to healthy adult returns. 2004 Sockeye enhancement strategies will be based on the abundance of adults returning to Rivers and Smith Inlets.

NORTH COAST

Mainland

KITIMAT: Juveniles were released on schedule and under normal river conditions in 2003. This was the "Year of the Pink Salmon" with extremely high numbers of spawners returning to the Kitmat River. Chum & Chinook adult returns were estimated to be average, and coho returns appeared to be high. Although all 2003 eggtake targets were met, broodstock collection was challenging, due both to large numbers of pinks and budget constraints.

Kitimat Hatchery Operation is in its 20th year of providing fish for a variety of purposes. The Kitimat watershed now boasts a world class sport fishery, and is a good contributor to commercial catches in both BC and Alaska. Stock rebuilding will remain a work in progress; the Kitimat Watershed continues to suffer from annual floods, and more recently has experienced unusally low water levels during the summer months. Thus there is a continued need for the facility to assist in both habitat improvement and fish stock enhancement.

FULTON AND PINKUT: The brood year 2002 outmigration from all locations (three channels and two rivers) was slightly in excess of 200 M fry, approximately 20% greater than the long-term average. While egg-fry survivals remained high in the Pinkut Creek channel, survivals dropped sharply in the large Fulton River channel. The cause of this reduction remains uncertain, as spawners did not experience the tell-tale precursers of future fertility problems (i.e. excessive prespawning mortality or egg retension rates) that have accompanied parasite infections in some recent years. For the fall of 2003, spawner targets for all locations were met, with moderate numbers of "excess" fish being experienced at both projects. Fortunately, due in part to cool summer temperatures, no outbreaks of either Ich or Loma were experienced. Given the calculated egg depositions, average to high survival rates could result in very strong fry production in the spring of 2004.

Queen Charlotte Islands

PALLANT: Pallant Creek Hatchery is operated by the Haida Tribal Society. Total chum returns in 2003 to Pallant Creek and Mathers Creek were less than half the forecast return. The commercial fishery consisted of a test fishery only. The cost recovery harvest for chum was approximately 19% of the total harvest. Chum egg targets were not met, due to low returns. Coho returns were below average but the egg target was met. Remnant chinook from past transplant efforts (1986 - 88 broods) are still persisting.

LOWER FRASER

Lower Fraser River

CHEHALIS: The fall 2003 coho returns appeared slightly below average (est. 15-20 K), about half of last year. Intensive sport fishing activity occurred on both the Chehalis and Harrison Rivers. Brood year 2003 chum returns were down, with a total escapement to the river estimated at 40 K. Reduced releases of enhanced fry in both contributing brood years was at least partially responsible for the lower return. The return of Harrison white chinook appeared to be above average (over 100 K). The summer/red chinook return was average to good (est.1500 plus). The return of pinks to the Chehalis was only 2000, so 370 K eggs were taken. This is the first time pinks have been enhanced in the Chehalis.

CHILLIWACK: The winter steelhead run started in late December and finished in April. It was considered an average run, with a few peaks along the way. No creel has been done since the mid 1980's. Summer Chinook had one of the highest escapements back to the hatchery rack, followed by an above average summer fishery. This is however anecdotal, as there has never been a creel for this transplanted Summer Red Chinook fishery. The Fall sport fishery was highlighted by the large escapement of odd year adult Pinks and low water conditions through to mid October, which was followed by extreme high water conditions. This flood event was disastrous to main stem adult spawners and eggs deposited up to that point and beyond. This high water event seriously affected the Creel Census and fall chinook Escapement programs. There were significant sport fisheries on Coho, Pink, Chinook and Chum. A small number of Cultus Lake Sockeye were caught and released. The Coho sport fisheries had a 30 % increase in harvest over the previous year while the Fall Chinook sport harvest was lower by a third. The 2000 Fall Chinook smolt release was half normal and the high water came slightly after the mid point of this fishery, which may explain the decrease. The Chum sport harvest and escapements were down. The lower Vedder River, particularly the side channels, appeared to have good Chum escapements compared to the mid and upper Chilliwack River and tributaries. There was no escapement enumerations program for Chum. Hatchery staff attempted to locate and assess the indigenous Summer Chinook, which are main stem spawners above the hatchery. Fewer than ten were seen, of which most were jacks. No brood eggs were collected. All hatchery production egg targets were met.

INCH: Chum and chinook stocks showed a strong return in 2003 but coho returns were very poor. Chum escapement to Inch Creek was 25,000. The Stave River chum escapement was 200,000. All coho returns were subject to an active recreational fishery. Nicomekl and Serpentine eggs were taken from brood year 2003 in a partnership with local community groups. The Stave chinook target of 250K eggs was easily met from Stave returns. Conservation work on Maria Slough chinook continues with an excellent return of 1500 fish in 2003. Mass marking of hatchery coho continues.

UPPER PITT: For the spring of 2003, 3.6 M sockeye fry were released from the facility. In addition, an estimated 6.2 M fry were produced from the hatchery-operated Alvin Patterson spawning channel. The preliminary 2003 sockeye escapement estimate is 75,000. However, flooding in November may have destoyed 90% of the wild egg deposition.

In November the old hatchery site was taken out of service and 2.5 M eyed eggs were transferred to the new sockeye satellite facility at Inch Creek Hatchery. In addition hatchery staff continue to operate the Alvin Patterson spawning channel.

CULTUS LAKE SOCKEYE: The captive brood program remained active. Rosewall Creek Hatchery on Vancouver Island is currently rearing stock from the 2000, 2001, and 2002 brood years. A significant number of smolts (225,000 - surplus to captive brood requirements from 2002 eggtake) were released to Cultus Lake in September, 2003. A successful adult holding/egg-take/incubation program was conducted for 2003 brood year fish. A discrete selection of eggs will be set aside for captive brood purposes and the 'surplus' eggs will be ponded and reared at the Inch Creek isolation facility for a fall release to Cultus Lake.

WEAVER CREEK: For brood year 2002, sockeye egg to fry survival rate was 67%, resulting in 46 million fry being produced. For brood year 2003, an average escapement resulted in the creek being loaded to less than 50% capacity. The channel, however, was loaded to full capacity. The pre-spawning mortality rate remained fairly low at roughly 12%. This resulted in an estimated total egg deposition of 67 million sockeye eggs. 220 K pink eggs were transplanted to north Fraser streams.

Strait of Georgia Mainland

CAPILANO: Capilano River adult chinook and coho returns provided excellent terminal tidal and non-tidal sports fishing opportunities. Chinook and coho adult returns to the hatchery itself were lower than average; however, egg targets were achieved and target spawning escapement from the transport of adult coho upstream of the Cleveland Dam was also achieved. The low chinook and coho returns to the hatchery were most likely due to very low summer and early fall river water flows that hampered migration up the river. This low water flow rate allowed the terminal First Nation fishery to be very effective at the mouth of the river where higher than normal harvest of adult coho occurred. Low adult steelhead returns to the Capilano River are of continued concern.

TENDERFOOT: The chinook return was much weaker than in the last few years. In spite of this, the egg target was met but required a substantial effort. Pink escapements to the Squamish system were near historical levels, in the order of two hundred thousand plus to the system. The chum return looked promising during the initial stages. Unfortunately, during November the entire Squamish system and tributaries were hit with the largest flood in recent memory. This undoubtedly had a negative impact on eggs\alevins in the gravel and on pre-spawning chum and coho adult fish. The chum runs, with the exception of Tenderfoot Cr. proper, were very low and coho escapements appear to be similarly dismal. Additional coho and chum eggs were taken for fry releases for underseeded habitat restoration projects and PIP projects. A small number (100K) of pink eggs were taken from the Cheakamus River and had been planted in the channels at the North Vancouver Outdoor School as a contingency against disaster, which occurred.

BC INTERIOR

Thompson River

SHUSWAP: For the second consecutive year, given building escapements to the Middle Shuswap River, only Duteau Creek coho were enhanced . Poor escapements combined with extremely low flows resulted in very few adults reaching the adult collection fence. Strong chinook escapements to both Lower and Middle Shuswap led to egg take targets being obtained. For the first time, Okanagan sockeye eggs (400 K) were brought to the facility for both incubation and initial rearing. This work is part of a range extension project being championed by local First Nations.

SPIUS: For the Salmon River, low flows prevented the natural migration of chinook which resulted in a smaller escapement than brood (<200). The Salmon coho escapement was also depressed (<30) with only one female being counted/collected at the fence. Nicola, Coldwater and Spius chinook escapements were strong and egg targets were met. For the other three coho stocks, egg targets were attained for Deadman and Spius, but due to weaker returns and environmental conditions, egg targets were not met for Coldwater coho. For wild chinook production throughout the south/mid Thompson, high water temperatures and low flows during migration and spawning will likely result in reduced egg survivals

Upper Fraser

NADINA: Although the system experienced a very low escapement in the fall of 2002, an egg to fry survival rate of 73% resulted in the production of 1.7 M fry. For brood year 2003, another very low escapement to the watershed resulted in only 1300 adults being loaded into the channel. Fortunately, prespawning mortality and egg retension rates were extremely low.

HORSEFLY: For the sub dominant 2002 cycle year, a fully loaded channel led to the production of just under 30 M fry, resulting in an egg to fry survival rate of near 80%. Prior to the fall of 2003 operation, engineering staff constructed a series of exfiltration ponds that allowed the channel to be cleaned with no sediment discharge into the river. For the fall of 2003 weak cycle return, full loading of the channel combined with low prespawn mortality rates led to a calculated deposition of 32 M eggs.

Regional Headquarters

LAKE ENRICHMENT PROGRAM

Two major Lake Enrichment projects were carried out in 2003. This technique adds a concentrated nutrient solution to the surface of lakes to stimulate the production of food organisms for sockeye salmon, increasing sockeye production by an estimated 50%. The first project was on Great Central Lake, which has been enriched annually for over 30 years to support the Barkley Sound sockeye fishery. The second project was on Woss Lake, in a cooperative study with the Nimpkish River Management Board to study the complete ecological impact of the enrichment technique. Woss Lake is also a stock rebuilding project.

Reports of the Joint Technical Committees

PART V
REPORTS OF THE JOINT TECHNICAL COMMITTEES

Executive summaries of reports submitted to the Commission by the joint technical committees during the period April 1, 2003 to March 31, 2004 are presented in this section. Copies of the complete reports are available from the library of the Pacific Salmon Commission.

A. JOINT CHINOOK TECHNICAL COMMITTEE

CATCH AND ESCAPEMENT OF CHINOOK SALMON UNDER PACIFIC SALMON COMMISSION JURISDICTION, 2002
REPORT TCCHINOOK (03)-1

The June 30, 1999, Pacific Salmon Treaty (PST) Annexes and Related Agreements (Agreement) substantially changed the objectives and structure of the Pacific Salmon Commission's (PSC) chinook salmon fisheries and assessment of chinook salmon stocks. The Agreement eliminated the previous ceiling and pass-through fisheries and replaced them with Aggregate Abundance Based Management (AABM) and Individual Stock Based Management (ISBM) fisheries. It also tasked the Chinook Technical Committee (CTC) with a number of assignments (Appendix to Annex IV, Chapter 3).

In this report, we provide a summary of 2002 fishery catches by region and an assessment of escapement for those stocks that have CTC agreed goals. In addition, escapement data and agency comments have been provided for all escapement indicator stocks. We will also provide a second annual report that summarizes the exploitation rate analysis and the results of the CTC model calibration as was done last year (see CTC 2002a). Model calibration results will include postseason statistics for the 2002 fisheries and preseason predictions for the 2003 fisheries.

CHINOOK CATCH 2002

Only catches and some fishery effort estimates are presented in this report. Assessment of compliance with the Agreement for both the AABM and ISBM fisheries requires more detailed analyses using coded-wire tag (CWT) data and calibration of the CTC model. As was done in 2002, these analyses will be reported in the annual Exploitation Rate and Model Calibration Report (e.g., CTC 2002a).

ESCAPEMENTS THROUGH 2002

The escapement review includes 50 naturally spawning escapement indicator stocks/stock aggregates. Biologically-based escapement goals have been accepted by the CTC for 17 of the 50 escapement indicator stocks/stock aggregates. For 11 of these stocks, the agency escapement goal is defined as a range; for the remaining six stocks, the escapement goal is the point estimate of S_{MSY} (escapement producing maximum sustained yield). In 2002, escapements were within the goal range for six stocks, above the range or S_{MSY} point estimate for nine stocks, and below the goal range for 1 stock. It was not possible to provide this assessment for the other stocks without agreed escapement goals. However, data for other stocks are presented to illustrate trends in escapement. Some stocks are managed to an agency goal, but these goals have not been accepted by the CTC. The CTC will continue to review analyses to develop CTC agreed goals for the remaining stocks as they are provided.

ANNUAL EXPLOITATION RATE ANALYSIS AND MODEL CALIBRATION TCCHINOOK (03)-2

This report contains the results of the Chinook Technical Committee (CTC) annual exploitation rate assessment and the final pre-season chinook model calibration for 2003 (CLB 0308). Results include the Abundance Indices (AIs) for the Aggregate Abundance Based Management (AABM) fisheries and Individual Stock Based Management (ISBM) Indices for each party, and a summary of pre-season forecast methods by stock.

AABM Abundance Indices and Associated Catches

The AIs for the three AABM fisheries, i.e., Southeast Alaska All Gear (SEAK), Northern British Columbia Troll and Queen Charlotte Islands Sport (NBC), and West Coast Vancouver Island Troll and Outside Sport (WCVI)), are presented in Table 1. The 1999 Agreement specified that the AABM fisheries were to be managed through the use of the AIs. Pre-season AIs are used to set allowable catch limits for management for the upcoming fishing season. Subsequently, post-season AIs (from the following year's calibration) are used to track overage and underage provisions. Each calibration provides the first post-season AIs for the previous year and the pre-season AIs for the current year. The first 2002 post-season AIs, and the 2003 pre-season AIs have now been finalized.

Table 1. Abundance Indices for 1999 to 2003 for the SEAK, NBC, and WCVI AABM fisheries.

	SEAK		**NBC**		**WCVI**	
Year	**Pre-season**	**Post-season**	**Pre-season**	**Post-season**	**Pre-season**	**Post-season**
1999	1.15	1.12	1.12	0.97	0.60	0.50
2000	1.14	1.10	1.00	0.95	0.54	0.47
2001	1.14	1.29	1.02	1.22	0.66	0.68
2002	1.74	1.82	1.45	1.63	0.95	0.92
2003	1.79	-	1.48	-	0.85	-

In general, the AIs for 1999 through 2001 are low compared to AIs in the late 1980s and early 1990s but values have increased in 2002 and 2003. The AI values in 2002 are comparable to the higher values in the time series. The Agreement specifies an allowable catch for each AI for each fishery. The specified Treaty catch by fishery and year and the actual (observed) catches are shown in Table 2.

Table 2. Observed catches and post-season allowable catches for 1999 to 2002, and pre-season allowable catches for 1999 to 2003, for AABM fisheries

	Pacific Salmon Treaty Allowable and Observed Catches								
	SEAK			NBC			WCVI		
Year	Pre-season Allowable Catch	Post-season Allowable Catch	Observed Catch	Pre-season Allowable Catch	Post-season Allowable Catch	Observed Catch	Pre-season Allowable Catch	Post-season Allowable Catch	Observed Catch
1999	192,750	184,200	198,842	145,600	126,100	92,899	128,300	107,000	36,413
2000	189,900	178,500	186,493	130,000	123,500	31,900	115,500	86,200	101,438
2001	189,900	250,300	186,838	132,600	158,933	43,500	141,200	145,500	117,670
2002	356,500	371,933	357,100	192,700	237,805	137,775	203,200	196,799	165,036
2003	366,132	-	-	197,067	-	-	181,825	-	-

The 1999 Agreement specifies that overage/underage provisions apply to both AABM and ISBM fisheries. However, in a February 12, 2002 letter to the Pacific Salmon Commission (PSC), the CTC identified major technical obstacles and policy concerns for adjusting harvest levels in response to overage and underages. The major problem identified for AABM fisheries is the confounding of forecast and management error in assessing overages and underages. The pre-season estimates of abundance used to set management goals can be substantially different than the estimates (Tables 1 and 2) due to forecast error. Pre-season allowable catch levels used to guide managers in setting harvest efforts thus can be quite different from the allowable harvest derived from the first post-season calibration (Table 2). As a result, management precision during the fishery differs from the precision of attaining the target. For example, in SEAK, the observed catch has been within –1.8% to +3.2% of the pre-season target, but has ranged from 25.3% below to 7.9% above the post-season target.

Until an approach for full implementation has been developed and accepted by the PSC, the Commissioners have instructed the CTC to track overages and underages relative to agreed-upon harvest objectives. Table 3 shows the differential in AABM fisheries between the post-season allowable catch and the observed catch for 1999–2002, and the cumulative differential for those years. All three AABM fisheries have cumulative underages. In SEAK, observed catches have been below final allowable catches for two of four years; the cumulative differential is –5.7%. In NBC, observed catches have been below the final allowable catches in all four years; the cumulative differential is –52.6%. In WCVI, observed catches have been below allowable catches for three of four years; the cumulative differential is –21.5%.

Table 2. Observed catches and post-season allowable catches for 1999 to 2002, and pre-season allowable catches for 1999 to 2003, for AABM fisheries

	Pacific Salmon Treaty Allowable and Observed Catches								
	SEAK			NBC			WCVI		
Year	Pre-season Allowable Catch	Post-season Allowable Catch	Observed Catch	Pre-season Allowable Catch	Post-season Allowable Catch	Observed Catch	Pre-season Allowable Catch	Post-season Allowable Catch	Observed Catch
1999	192,750	184,200	198,842	145,600	126,100	92,899	128,300	107,000	36,413
2000	189,900	178,500	186,493	130,000	123,500	31,900	115,500	86,200	101,438
2001	189,900	250,300	186,838	132,600	158,933	43,500	141,200	145,500	117,670
2002	356,500	371,933	357,100	192,700	237,805	137,775	203,200	196,799	165,036
2003	366,132		-	197,067	-	-	181,825	-	-

The 1999 Agreement specifies that overage underage provisions apply to both AABM and ISBM fisheries. However, in a February 12, 2002 letter to the Pacific Salmon Commission (PSC), the CTC identified major technical obstacles and policy concerns for adjusting harvest levels in response to overage and underages. The major problem identified for AABM fisheries is the confounding of forecast and management error in assessing overages and underages. The pre-season estimates of abundance used to set management goals can be substantially different than the estimates (Tables 1 and 2) due to forecast error. Pre-season allowable catch levels used to guide managers in setting harvest efforts thus can be quite different from the allowable harvest derived from the first post-season calibration (Table 2). As a result, management precision during the fishery differs from the precision of attaining the target. For example, in SEAK, the observed catch has been within -1.8% to +3.2% of the pre-season target, but has ranged from 25.3% below to 7.9% above the post-season target.

Until an approach for full implementation has been developed and accepted by the PSC, the Commissioners have instructed the CTC to track overages and underages relative to agreed-upon harvest objectives. Table 3 shows the differential in AABM fisheries between the post-season allowable catch and the observed catch for 1999-2002, and the cumulative differential for those years. All three AABM fisheries have cumulative underages. In SEAK, observed catches have been below final allowable catches for two of four years; the cumulative differential is -5.7%. In NBC, observed catches have been below the final allowable catches in all four years; the cumulative differential is -52.6%. In WCVI, observed catches have been below allowable catches for three of four years, the cumulative differential is -21.5%.

Table 3. Differences between observed Treaty catch and the post-season Treaty allowances as number of fish and percentages of allowable catch for AABM fisheries in 1999 to 2002

	SEAK		NBC		WCVI	
Year	**Number of Fish**	**Percent Difference**	**Number of Fish**	**Percent Difference**	**Number of Fish**	**Percent Difference**
1999	+14,642	+7.9%	-33,201	-26.3%	-70,587	-66.0%
2000	+7,993	+4.5%	-91,600	-74.2%	+15,238	+16.0%
2001	-63,462	-25.3%	-115,400	-72.6%	-27,830	-19.1%
2002	-14,833	-4.0%	-100,030	-42.1%	-31,763	-16.1%
Cum.	-55,560	-5.7%	-340,231	-52.6%	-114,942	-21.5%

ISBM Indices

The Agreement specifies that until agreed escapement objectives for the stock groups listed in Attachments I to V have been achieved, Canada and the United States will reduce base period exploitation rates by 36.5% and 40.0%, equivalent to ISBM indices of 0.635 and 0.60, in their respective ISBM fisheries that affect those stock groups. This requirement is referred to as the 'general obligation' and does not apply to stock groups that achieve their CTC agreed escapement goals. Estimated ISBM fishery indices are shown in Table 4 for Canadian fisheries and Table 5 for United States (U.S.) fisheries. Both tables present Coded-Wire Tag (CWT)-based indices for 2001, and chinook model-based indices for 2003. The agreement specifies that the ISBM indices be forecasted pre-season and evaluated post-season for each escapement indicator stock listed in Attachments I to V of the Chinook Chapter.

(1) CWT-based Indices in 2001

All Canadian ISBM indices from the CWT-based estimates for 2001 show that exploitation rates were reduced more than required under the agreement for all stocks or stock groups. Four of the 16 U.S. ISBM indices for the CWT-based estimates for 2001 were reduced more than required under the agreement. Of the 12 U.S. CWT-based ISBM indices that exceeded 0.60, five have agreed escapement goals and all five exceeded their goal in 2001.

(2) Predicted ISBM Indices for 2003

Seven of the 20 predicted model-based ISBM indices for 2003 based on outputs from calibration 0308 are above the allowable value of 0.635 for Canadian ISBM fisheries. None of the seven have agreed escapement goals. Thirteen of the 23 predicted model-based indices for 2003 are above the allowable limit for U.S. ISBM fisheries. Seven of these 13 stocks have agreed escapement goals.

Table 4. ISBM Indices for Canadian fisheries, CWT-based for 2001, and the predicted indices for 2003 from the PSC Chinook Model.

		Canadian ISBM Indices	
Stock Group	Escapement Indicator Stock	CWT Indices for 2001	Model Indices for 2003
North / Central B. C.	Yakoun, Nass, Skeena, Area 8	NA	0.689
West Coast Vancouver Island Falls	WCVI (Artlish, Burman, Kauok, Tahsis, Tashish, Marble)	0.060	0.744
Fraser Early (spring and summers)	Upper Fraser, Mid Fraser, Thompson	NA	0.661
Fraser Late	Harrison River[2]	0.090	0.352
Upper Strait of Georgia	Klinaklini, Kakweikan, Wakeman, Kingcome, Nimpkish	0.040	0.649
Lower Strait of Georgia	Cowichan	0.260	0.490
	Nanaimo	0.260	0.498
North Puget Sound Natural Springs	Nooksack, Skagit	0.040 NA	0.251 0.251
Puget Sound Natural Summer / Falls	Skagit	NA	0.436
	Stillaguamish	0.145	0. 513
	Snohomish	NA	0.435
	Lake Washington	NA	0.508
	Green River	0.350	0.508
Washington Coastal Fall Naturals[4]	Hoko, Grays Harbor, Queets, Hoh, Quillayute	NA	0.292
Columbia River Falls[3]	Upriver Brights	NA	0.686
	Deschutes	NA	0.686
	Lewis[2]	NA	0.515
Columbia R Summers[3]	Mid-Columbia Summers[2]	NA	0.352
Far North Migrating OR Coastal Falls[3]	Nehalem[2], Siletz[2], Siuslaw[2]	NA	0.689

[1] NA means not available because of insufficient data (lack of stock specific tag codes, base period CWT recoveries, etc).

[2] Stock or stock group with agreed escapement goal.

[3] Stock group not in Annex Table IV.

Table 4. ISBM Indices for Canadian fisheries, CWT-based for 2001, and the predicted indices for 2003 from the PSC Chinook Model.

		Canadian ISBM Indices	
Stock Group	Escapement Indicator Stock	CWT Indices for 2001	Model Indices for 2003
North / Central B. C	Yakoun, Nass, Skeena, Area 8	NA	0.689
West Coast Vancouver Island Falls	WCVI (Artlish, Burman, Kauok, Tahsis, Tashish, Marble)	0.060	0.744
Fraser Early (spring and summers)	Upper Fraser, Mid Fraser, Thompson	NA	0.661
Fraser Late	Harrison River[2]	0.090	0.352
Upper Strait of Georgia	Klinaklini, Kakweikan, Wakeman, Kingcome, Nimpkish	0.040	0.649
Lower Strait of Georgia	Cowichan Nanaimo	0.260 0.260	0.490 0.498
North Puget Sound Natural Springs	Nooksack, Skagit	0.040 NA	0.251 0.251
Puget Sound Natural Summer Falls	Skagit Stillaguamish Snohomish Lake Washington Green River	NA 0.145 NA NA 0.350	0.436 0. 513 0.435 0.508 0.508
Washington Coastal Fall Naturals[3]	Hoko, Grays Harbor, Queets, Hoh, Quillayute	NA	0.292
Columbia River Falls[3]	Upriver Brights Deschutes Lewis	NA NA NA	0.686 0.686 0.515
Columbia R Summers	Mid-Columbia Summers	NA	0.352
Far North Migrating OR Coastal Falls	Nehalem , Siletz , Siuslaw	NA	0.689

[1] NA means not available because of insufficient data (lack of stock specific tag codes, base period CWT recoveries,
etc)

[2] Stock or stock group with agreed escapement goal.

[3] Stock group not in Annex Table IV

Table 5. ISBM indices for U.S. fisheries, CWT-based for 2001, and the predicted indices for 2003 from the PSC Chinook Model.

			U.S. ISBM Indices
Stock Group	**Escapement Indicator Stock**	**CWT Indices for 2001**	**Model Indices for 2003**
North / Central B.C. [3]	Yakoun, Nass, Skeena, Area 8	NA	NC
West Coast Vancouver Island Falls [3]	WCVI (Artlish, Burman, Kauok, Tahsis, Tashish, Marble)	NA	0.658
Fraser Early (spring and summers) [3]	Upper Fraser, Mid Fraser, Thompson	NA	0.277
Fraser Late	Harrison River [4]	0.310	0.981
Upper Strait of Georgia [2]	Klinaklini, Kakweikan, Wakeman, Kingcome, Nimpkish	NA	NC
Lower Strait of Georgia [3]	Cowichan, Nanaimo	11.350 11.350	0.452 0.452
North Puget Sound Natural Springs	Nooksack Skagit	0.040 NA	0.121 0.119
Puget Sound Natural Summer / Falls	Skagit Stillaguamish Snohomish Lake Washington Green R	NA 0.890 NA NA 1.180	0.406 0.184 0.072 0.768 0.263
Washington Coastal Fall Naturals	Hoko Grays Harbor Queets Hoh Quillayute	NA 0.860 1.440 1.660 1.480	0.682 0.494 1.063 1.208 1.292
Columbia River Falls	Upriver Brights Deschutes Lewis [4]	1.350 0.520 0.580	1.022 0.561 0.851
Columbia R Summers	Mid-Columbia Summers [4]	5.320	0.794
Far North Migrating OR Coastal Falls	Nehalem [4] Siletz [4] Siuslaw [4]	1.940 1.190 2.180	2.346 1.302 2.856

[1] NA means not available because of insufficient data (lack of stock specific tag codes, base period CWT recoveries,
etc.)

[2] NC means that the current model assumes the stock is not caught in U.S. ISBM fisheries.

[3] Stock group not in Annex Table V.

[4] Stock with agreed escapement goal.

Table 5. ISBM indices for U.S. fisheries, CWT-based for 2001, and the predicted indices for 2003 from the PSC Chinook Model.

			U.S. ISBM Indices
Stock Group	**Escapement Indicator Stock**	**CWT Indices for 2001**	**Model Indices for 2003**
North / Central B. C. [3]	Yakoun, Nass, Skeena, Area 8	NA	NC
West Coast Vancouver Island Falls [3]	WCVI (Artlish, Burman, Kauok, Tahsis, Tashish, Marble)	NA	0.658
Fraser Early (spring and summers) [3]	Upper Fraser, Mid Fraser, Thompson	NA	0.277
Fraser Late	Harrison River [4]	0.310	0.981
Upper Strait of Georgia [2]	Klinaklini, Kakweikan, Wakeman, Kingcome, Nimpkish	NA	NC
Lower Strait of Georgia [3]	Cowichan,	11.350	0.452
	Nanaimo	11.350	0.452
North Puget Sound Natural Springs	Nooksack	0.040	0.121
	Skagit	NA	0.119
Puget Sound Natural Summer / Falls	Skagit	NA	0.406
	Stillaguamish	0.890	0.184
	Snohomish	NA	0.072
	Lake Washington	NA	0.768
	Green R	1.180	0.263
Washington Coastal Fall Naturals	Hoko	NA	0.682
	Grays Harbor	0.860	0.494
	Queets	1.440	1.063
	Hoh	1.660	1.208
	Quillayute	1.480	1.292
Columbia River Falls	Upriver Brights	1.350	1.022
	Deschutes	0.520	0.561
	Lewis [4]	0.580	0.851
Columbia R Summers	Mid-Columbia Summers [4]	5.320	0.794
Far North Migrating OR Coastal Falls	Nehalem [4]	1.940	2.346
	Siletz [4]	1.190	1.302
	Siuslaw [4]	2.180	2.856

[1] NA means not available because of insufficient data (lack of stock specific tag codes, base period CWT recoveries, etc).

[2] NC means that the current model assumes the stock is not caught in U.S. ISBM fisheries.

[3] Stock group not in Annex Table V.

[4] Stock with agreed escapement goal.

Stock Forecasts

Generally, the model can replicate the agency forecasts with more accuracy than the agency forecasts predict the post-season estimate. These agency forecasts suggest that chinook abundance in 2003 will be less than in 2002 but higher than observed in 2001.

Stock Escapements

The detailed description of trends in escapement has been summarized in the CTC Catch and Escapement report, covering data through 2002 (CTC 2003). The escapement review includes 51 naturally spawning escapement indicator stocks/stock aggregates. Biologically based escapement goals have been accepted by the CTC for 17 of the 51 escapement indicator stocks/stock aggregates. For 11 of these stocks, the agreed escapement goal is defined as a range; for the remaining 6 stocks, the escapement goal is the point estimate of S_{MSY} (escapement producing maximum sustained yield). In 2002, escapements were within the goal range for 6 stocks, above the range or S_{MSY} point estimate for 10 stocks, and below the goal range for 1 stock.

B. JOINT CHUM TECHNICAL COMMITTEE

FINAL 1994 - 2001 POST SEASON SUMMARY REPORT
TCCHUM (03)-1

This Joint Chum Salmon Technical Committee report presents the appropriate information on chum salmon stocks and fisheries in southern British Columbia and Washington for the years 1994 through 2001. It also addresses the specific provisions and requirements of Chapter 6 of Annex IV of the Pacific Salmon Treaty (PST) (Attachment 1).

The treaty between the governments of Canada and the United States of America (U.S.) concerning Pacific salmon was designed to facilitate co-operation between the two countries in the management, research and enhancement of Pacific salmon stocks. Chapter 6 of Annex IV of the Pacific Salmon Treaty (PST) required that certain fisheries for chum salmon in southern British Columbia (B.C.) and Washington be managed in a specified manner. Other fisheries, while not specifically mentioned in the PST, are known to harvest chum of the other country's origin. This report discusses various aspects of the chum present in Washington State and in B.C. waters between Vancouver Island and the mainland and off the west coast of Vancouver Island, and discusses the management actions of Canada and the U.S. in relation to the PST requirements.

The Chum Annex (Chapter 6 of Annex IV of the PST) had been renewed for one or more years since it was initially negotiated in 1987. However, in 1994, the Parties to the PST were unable to reach agreement on a number of provisions of the PST, including the Chum Annex. Thus, no formal agreement existed for the 1994 season, although the parties essentially continued to observe the provisions of the expired annex.

In 1995 the Parties were able to agree on a Chum Annex that was essentially the same as had existed in the years immediately prior to 1994. This annex was renewed annually until 1999 when a new Chum Annex was negotiated for a term of 10 years. This new annex was updated to be consistent with changes in the "Clockwork" management strategy implemented by Canada for fisheries in Johnstone Strait. It also included provisions to address the conservation concerns the United States has for Hood Canal and Strait of Juan de Fuca summer chum, which have been listed as a "threatened" species under the United States' Endangered Species Act.

C. JOINT COHO TECHNICAL COMMITTEE

No reports were finalized for publication during this reporting period.

D. JOINT NORTHERN BOUNDARY TECHNICAL COMMITTEE

U.S./CANADA NORTHERN BOUNDARY AREA 2003 SALMON FISHERIES MANAGEMENT REPORT AND 2004 PRELIMINARY EXPECTATIONS REPORT TCNB (04)-1

This report reviews:

1) catch, effort, and management actions in the 2003 Northern Boundary Area troll and net fisheries of southern Southeast Alaska Districts 101 to 108 and northern British Columbia Areas 1, 3, 4, and 5;

2) management performance relative to Treaty requirements for pink salmon;

3) preliminary expectations and fishing plans for 2004.

Historical catch and effort data by district or area, gear, species, and week are no longer reported annually in this report. They can be referenced in *Pacific Salmon Commission, Northern Boundary Technical Committee Report, U.S. / Canada Northern Boundary Area 1999 Salmon Fisheries Management Report and 2000 Preliminary Expectations*. Report TCNB (01)-1, January 2001. If these historical numbers are modified, they will be added as an appendix in a future annual report.

2003 Fisheries

There was a strong return of pink salmon to southern Southeast Alaska in 2003. Although the harvest of 29.3 million was slightly below the 1990s average of 30.8 million, the escapement index of 10.8 million pink salmon easily exceeded the escapement goal of 4.0 to 9.0 million for southern Southeast Alaska. The total Southeast Alaska pink salmon harvest of 52.5 million, was right at the top of the preseason forecast range of 30.0 to 52.0 million pink salmon. Harvest of other species in southern Southeast Alaska included: 3.5 million chum salmon (1990s average = 4.4 million), 1.2 million coho (1990s average = 1.1 million), and 0.8 million sockeye salmon (1990s average = 1.5 million).

In the North Coast of British Columbia, sockeye returns were below average for the Skeena sockeye aggregate (total Area 4 commercial net catch was 453,915). Commercial net catch for Nass area sockeye (427,849) was above average, while the estimated escapement of 263,688 was above the 200,000 target. An estimated 1.17 million sockeye passed through the Babine fence and enhanced Babine stocks were very close to target capacity in the Pinkut and Fulton spawning channels. Meanwhile, returns of non-enhanced Babine stocks were variable. Returns to the Morice and Kitwanga systems were below target but showed improvement over recent years, with estimated escapements of 15,000 and 3,352, respectively. Pink returns were strong in Area 3 and moderate in the Skeena (total Areas 3 and 4 net catch 2.86 million). Pink escapements were above target in Areas 3, 4 and 5 while chum escapements were below target. Low chum abundance in Areas 3 to 5 resulted in low escapements and catches. Management actions were initiated to minimize chum mortality throughout the Areas 3 to 5 net fishing season. The Area 1 troll fishery harvested 98,347 pinks, with low catches attributed to low effort.

MANAGEMENT PERFORMANCE

The June 1999 revision of the Pacific Salmon Treaty restructured the agreements for the Northern Boundary area fisheries – Alaska District 104 purse seine, Alaska District 101 drift gillnet, Canadian Area 3 net, and Canadian Area 1 troll. The new agreements are "abundance based" where the allowable harvest is a percent of annual allowable harvest (AAH). In Alaska's District 104 purse seine fishery, the Nass and Skeena sockeye run size determines the allowable harvests of these stocks prior to Statistical Week 31. In Alaska's District 101 gillnet fishery, the AAH is based solely on the Nass sockeye run. The abundance of Alaskan pink salmon returning to Districts 101-103 determines the allowable harvests of these stocks in Canada's Area 3 (1-4) net and Area 1 troll fisheries. Historical stock specific abundance and catch and effort data by district, gear, species, and week will no longer be included in this annual report to allow for easier and less cumbersome reporting. These tables can be referenced in *Pacific Salmon Commission, Northern Boundary Technical Committee Report, U.S. / Canada Northern Boundary Area 1999 Salmon Fisheries Management Report and 2000 Preliminary Expectations*. Report TCNB (01)-1, January 2001. If the historical catch and escapement numbers are modified, they will be added as an appendix in a future annual report.

The District 101 (Tree Point) drift gillnet fishery is under a Pacific Salmon Treaty abundance based management agreement. The agreement specifies a harvest of 13.8 percent of the AAH of the Nass sockeye run. For the 2003 season, DFO forecast a total run of 711,000 of Nass River sockeye salmon. The AAH is calculated as the total run of Nass sockeye salmon minus either the escapement requirement of 200 thousand or the actual in river escapement, whichever is less.

The District 101 drift gillnet fishery opens by regulation on the third Sunday in June. During the early weeks of the fishery, management is based on the run strength of Alaska wild stock chum and sockeye salmon and on the strength of the Nass River sockeye salmon. Beginning in the third week of July, when pink salmon stocks begin to enter the fishery in large numbers, management emphasis shifts by regulation to that species. By regulation, the District 101 Pink Salmon Management Plan sets gillnet fishing time in this district in relation to the District 101 purse seine fishing time when both fleets are concurrently harvesting the same pink salmon stocks. The cumulative sockeye harvest prior to the initiation of the Pink Salmon Management Plan in Week 30 was 84,225 fish, or about 80% of the season's total sockeye harvest.

The District 104 purse seine fishery opens the first Sunday in July; in 2003 the initial opening was July 6 (Week 28) The pre-Week 31 fishing plan for District 104 was based on the Canadian Department of Fisheries and Oceans (DFO) preseason forecast returns of about 700,000 sockeye bound for the Nass River and 1.2 million sockeye bound for the Skeena River. The preseason forecasts result in a total projected return of about 1.9 million with a resulting AAH of about 800,000. Using this forecast, the pre-Week 31 allowable harvest was approximately 19,000 Nass and Skeena sockeye salmon.

For 2003, Canada was to manage the Area 3-1 to 3-4 net fishery to achieve an annual catch share of 2.49 percent of the annual allowable harvest (AAH) of Alaskan Districts 101, 102, and 103 pink salmon production. The AAH for 2003 was 31,220,463 providing a Canadian catch allowance (2.49 %) of 777,390 pink salmon. The preliminary 2003 Canadian net pink catch in sub-areas 3-1 to 3-4 was 661,832 (499,810 for seine and 162,022 for gillnet). A preliminary estimate of the Alaska stock component of this total was estimated to be 489,302 fish, below the target allowable catch. Overall, North Coast Canadian pink returns were slightly better than expected. Escapements to the Queen Charlotte Islands (Areas 1, 2 East and 2 West) were minimal, as this year was an off-year for pinks. Areas 3 to 5 escapements were generally above target.

For 2003, Canada was to manage the commercial troll fishery in Area 1 to achieve an annual catch share of 2.57 percent of the annual allowable harvest (AAH) of Alaskan Districts 101, 102, and 103 pink salmon production. The AAH for 2003 was 31,220,463 pink salmon, allowing for a total allowable harvest of 802,366 pinks of Alaskan origin. The Canadian commercial troll fishery in Area 1 was open in the northern portion of the area for a majority of the season(Table 12), with area and time closures set to meet management objectives. The fishery harvested a total of 98,347 pink salmon, with an estimated 82,929 of Alaskan origin. This was well below the annex agreement for 2.57 percent of the AAH of Alaskan Districts 101, 102, and 103 pink salmon.

2004 Forecast

The 2004 pink salmon return to Southeast Alaska is expected to be strong. The Alaska Department of Fish and Game's forecast is for a harvest estimate of 50 million pink salmon for all of Southeast Alaska in 2003, with a range of 24-76 million (80% C.I.). Formal forecasts are not made for species other than pink salmon in Southeast Alaska.

Nass sockeye returns in 2004 are forecast to be 808 thousand. For the Skeena, the sibling model forecast predicts a 50% probability of 1.67 million sockeye returning to the Skeena in 2004, with a 25% probability of the return exceeding 2.40 million and a 75% probability the return will exceed 1.15 million. Nass area pink streams are predicted to have a surplus 1.73 million available for harvest while Area 4 pink returns are expected to be above average, with a projected surplus of 1.58 million fish.

E. JOINT TRANSBOUNDARY TECHNICAL COMMITTEE

SALMON MANAGEMENT AND ENHANCEMENT PLANS FOR THE STIKINE, TAKU AND ALSEK RIVERS, 2003

REPORT TCTR (03)-01

Management of transboundary river salmon to achieve conservation, allocation and enhancement objectives, as stipulated by the Pacific Salmon Treaty (PST), requires a co-operative approach by Canada and the United States. It is important that both Parties have a clear understanding of the objectives and agree upon procedures to be used in managing the fisheries, including the criteria upon which modifications of fishing patterns will be based. This document is intended to facilitate co-operative salmon management and research on transboundary stocks of the Stikine, Taku, and Alsek rivers conducted by the Canadian Department of Fisheries and Oceans (DFO), the Tahltan and Iskut First Nations (TIFN), the Taku River Tlingit First Nation (TRTFN), the Champagne & Aishihik First Nation (CAFN) and the Alaska Department of Fish and Game (ADF&G).

The report contains, by river system and species, the 2003 salmon run outlooks, spawning escapement goals, a summary of harvest sharing objectives, and an outline of management procedures to be used during the conduct of the 2003 fisheries. Numerical forecasts are presented for Stikine sockeye salmon, which is required by the PST, Taku chinook, sockeye and coho and Alsek sockeye; outlooks for other stocks are given qualitatively with reference to brood year escapement data where available. The report also contains joint plans for fry plants and egg collections and a detailed list of proposed field projects for 2003, identifying agency responsibility and contacts for the various functions within the projects.

F. JOINT TECHNICAL COMMITTEE ON DATA SHARING

No reports were finalized for publication during this reporting period.

G. JOINT SELECTIVE FISHERY EVALUATION COMMITTEE

MASS MARKING AND MARK-SELECTIVE FISHERIES FOR 2000 AND 2001 AND PLANNED ACTIVITEIS FOR 2002

SFEC (03)-1

This report provides information on mass marking, mark-selective fisheries and fishery sampling for Oregon, Washington, and British Columbia during 2000 and 2001 and planned activities for 2002. The information provided includes numbers of mass marked fish released, Double Index Tagging, a status report on electronic tag detection capabilities, and information pertaining to mark-selective fisheries (MSF). Information is included for Canadian Department of Fisheries & Oceans (CDFO), Washington Department of Fish & Wildlife (WDFW), Member Tribes of the Northwest Indian Fisheries Commission (NWIFC), U.S. Fish & Wildlife Service (USFWS) and Oregon Department of Fish & Wildlife (ODFW).

The information and data presented in this report was compiled by informal means by members of the RCWG. It is anticipated that preparation of future reports will be greatly facilitated by the implementation of the protocols and procedures for mass marking and mark-selective fisheries which were adopted by the PSC in November 2002.

Publications of the Pacific Salmon Commission

PART VI
PUBLICATIONS OF THE PACIFIC SALMON COMMISSION

Documents listed herein are available to domestic fishery agencies of Canada and the United States, research organizations, libraries, scientists and others interested in the activities of the Commission, through the offices of the Secretariat, 600 - 1155 Robson Street, Vancouver, B.C., V6E 1B5. Photocopying charges may be levied for documents which are out of print.

Reports published by the Pacific Salmon Commission after March 31, 2000 including Commission annual reports, annual reports of the Fraser River Panel, Joint Technical Committee reports and technical reports of the Pacific Salmon Commission are also available in full text format on the Commission's website at www.psc.org.

Documents listed here are those which were published during the period from 2003/04 inclusive. For previous publications, please refer to the Pacific Salmon Commission 1994/1995 Tenth Annual Report and 2000/2001 Sixteenth Annual Report, or contact the Pacific Salmon Commission Library.

A. ANNUAL REPORTS

No reports were finalized for publication during this reporting period.

B. REPORTS OF JOINT TECHNICAL COMMITTEES

i. Joint Chinook Technical Committee

41. TCCHINOOK (03)-1 – *Catch and Escapement of Chinook Salmon under Pacific Salmon Commission Jurisdiction.*

42. TCCHINOOK (03)-2 – *Annual Exploitation Rate Analysis and Model Calibration,* November 2003.

ii. Joint Chum Technical Committee

19. TCCHUM (03-1) – *Final 1994-2001 Post Season Summary Report.* April 2003.

iii. Joint Coho Technical Committee

No reports were finalized for publication during this reporting period.

iv. Joint Data Sharing Technical Committee

No reports were finalized for publication during this reporting period.

v. Joint Northern Boundary Technical Committee

No reports were finalized for publication during this reporting period.

vi. Joint Transboundary Technical Committee

No reports were finalized for publication during this reporting period.

vii. Selective Fishery Evaluation Committee

4. SFEC (03)-1 - *Mass Marking and Mark-Selective Fisheries for 2000 and 2001 and Planned Activities for 2002*. June 2003.

5. SFEC (03)-2 – *2003 Review of Mass Marking and Mark Selective Fishery Proposals*. September 2003.

C. REPORTS OF THE FRASER RIVER PANEL

14. *Report of the Fraser River Panel to the Pacific Salmon Commission on the 2000 Fraser River Sockeye Salmon Fishing Season.* PSC Staff. April 2003.

D. TECHNICAL REPORT SERIES OF THE PACIFIC SALMON COMMISSION

No reports were finalized for publication during this reporting period.

E. PUBLICATIONS BY PACIFIC SALMON COMMISSION SECRETARIAT STAFF

No reports were finalized for publication during this reporting period.

F. REPORTS OF THE INTERNATIONAL PACIFIC SALMON COMMISSION

Responsibility for maintenance of the library of the International Pacific Salmon Fisheries Commission, on its termination December 31, 1985, was transferred to the Pacific Salmon Commission. Documents in the Library include historical archival papers which are available to researchers and other interested parties through contact with the Pacific Salmon Commission's Librarian.

Publication of John F. Roos' History of the International Pacific Salmon Fisheries Commission, and P. Gilhousen's Estimation of Fraser River Sockeye Escapements ended all publication series of the International Pacific Salmon Fisheries Commission. Copies of all in-print Progress Reports and Bulletins of the International Pacific Salmon Fisheries Commission are available free of charge through the Library of the Pacific Salmon Commission. Copies of the History of the International Pacific Salmon Fisheries Commission may also be ordered through the Library of the Pacific Salmon Commission.

G. DOCUMENTS SUBMITTED BY THE PARTIES

In compliance with provisions of the Treaty, the Parties provide annual post-season fishery reports and updates on their respective salmonid enhancement programs to the Commission. Documents received during 2003/04 were:

1. *2003 Post Season Report for Canadian Treaty Limit Fisheries*. Canada Department of Fisheries and Oceans. December 4, 2003.

2. *Preliminary 2003 Post Season Report for United States Salmon Fisheries of Relevance to the Pacific Salmon Treaty*. United States Section, Pacific Salmon Commission. December, 2003.

3. *2003 Report on the Salmonid Enhancement Program in British Columbia*. Fisheries and Oceans Canada. February, 2004.

4. *2002 Annual Report on the Salmon Enhancement Activities of the United States*. United States Section, Pacific Salmon Commission. February 2003.

Report of the Auditors for 2003/2004

PART VII
AUDITORS' REPORT AND FINANCIAL STATEMENTS FOR THE PERIOD APRIL 1, 2003 TO MARCH 31, 2004

Financial Statements of

PACIFIC SALMON COMMISSION

Years ended March 31, 2004 and 2003

KPMG LLP
Chartered Accountants
400 - 625 Agnes Street
New Westminster BC V3M 5Y4

Telephone (604) 527-3600
Telefax (604) 527-3636
www.kpmg.ca

AUDITORS' REPORT TO THE COMMISSIONERS

We have audited the statement of financial position of the Pacific Salmon Commission as at March 31, 2004 and the statements of financial activities and fund balances and cash flows for the year then ended. These financial statements have been prepared to comply with the Treaty Between the Government of Canada and the Government of the United States of America Concerning Pacific Salmon (the "Treaty"). These financial statements are the responsibility of the Commission's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we plan and perform an audit to obtain reasonable assurance whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by the Commission, as well as evaluating the overall financial statement presentation.

In our opinion, these financial statements present fairly, in all material respects, the financial position of the Commission as at March 31, 2004 and the results of its operations and its cash flows for the year then ended in accordance with the basis of accounting described in note 2 to the financial statements.

These financial statements, which have not been, and were not intended to be, prepared in accordance with Canadian generally accepted accounting principles, are solely for the information and use of the Contracting Parties for complying with the Treaty. The Financial statements are not intended to be and should not be used by anyone other than the specified users or for any other purpose.

KPMG LLP

Chartered Accountants

New Westminster, Canada
May 21, 2004

KPMG LLP, a Canadian limited liability partnership is the Canadian member of KPMG International, a Swiss nonoperating association.

PACIFIC SALMON COMMISSION

Statements of Financial Position

March 31, 2004 and 2003

	General Fund (note 4)	Working Capital Fund	Test Fishing Fund	Special Research Fund	Capital Assets Fund	2004 Total	2003 Total
Assets							
Current assets:							
Cash and cash equivalents	$ 914,319	$ 102,381	$ 542,563	$ 107,158	$ -	$ 1,666,421	$ 920,205
Accounts receivable	98,096	-	-	-	-	98,096	50,604
Interest receivable	1,669	-	-	-	-	1,669	1,173
Prepaid expenses	15,384	-	-	-	-	15,384	15,177
	1,029,468	102,381	542,563	107,158	-	1,781,570	987,159
Accrued benefits	-	-	-	-	-	-	11,565
Capital assets (note 3)	-	-	-	-	314,876	314,876	212,857
	$ 1,029,468	$ 102,381	$ 542,563	$ 107,158	$ 314,876	$ 2,096,446	$ 1,211,581
Liabilities and Net Assets							
Current liabilities:							
Accounts payable and accrued liabilities	$ 610,545	$ -	$ -		$ -	$ 610,545	$ 93,022
Accrued benefit obligation (note 6)	1,920	-	-		-	1,920	-
	612,465	-	-	-	-	612,465	93,022
Fund balance (note 4)	417,003	102,381	542,563	107,158	314,876	1,483,981	1,118,559
	$ 1,029,468	$ 102,381	$ 542,563	$ 107,158	$ 314,876	$ 2,096,446	$ 1,211,581

See accompanying notes to financial statements

Approved on behalf of the Commission:

Chair, Standing Committee on Finance and Administration

Vice-Chair, Standing Committee on Finance and Administration

PACIFIC SALMON COMMISSION

Statements of Financial Activities and Fund Balances

Years ended March 31, 2004 and 2003

	General Fund	Working Capital Fund	Test Fishing Fund	Special Research Fund	Capital Assets Fund	2004 Total	2003 Total
Fund balance, beginning of year	$ 168,399	$ 105,222	$ 504,831	$ 127,250	$ 212,857	$ 1,118,559	$ 756,999
Revenue:							
Contributions from contracting parties	3,012,884	-	-	-	-	3,012,884	3,234,013
Interest	31,865	2,386	-	-	-	34,251	19,061
Gain (loss) on disposal of capital assets	1,900	-	-	-	-	1,900	(5,792)
Other	1,183	-	-	-	-	1,183	990
Test fishing	692,080	-	-	-	-	692,080	1,447,865
	3,739,912	2,386	-	-	-	3,742,298	4,696,137
Expenditures:							
Amortization	-	-	-	-	140,088	140,088	113,326
Salaries and employee benefits	1,986,071	-	-	-	-	1,986,071	1,914,107
Travel and transportation	66,504	-	-	-	-	66,504	95,924
Rents and communication	100,340	-	-	-	-	100,340	100,992
Printing and reproductions	6,096	-	-	-	-	6,096	3,057
Contract services	389,821	4	-	-	-	389,825	460,530
Materials and supplies	51,945	-	-	-	-	51,945	54,325
Foreign exchange	(33,602)	-	-	-	-	(33,602)	15,480
Test fishing	649,517	-	-	-	-	649,517	1,163,536
Consultant contracts	-	-	-	20,092	-	20,092	413,300
	3,216,692	4	-	20,092	140,088	3,376,876	4,334,577
Excess (deficiency) of revenue over expenditures	523,220	2,382	-	(20,092)	(140,088)	365,422	361,560
Transfer to Working Capital Fund	5,223	(5,223)	-	-	-	-	-
Transfer to Test Fishing Fund	(37,732)	-	37,732	-	-	-	-
Transfer to Capital Asset Fund	(242,107)	-	-	-	242,107	-	-
Fund balance, end of year	$ 417,003	$ 102,381	$ 542,563	$ 107,158	$ 314,876	$ 1,483,981	$ 1,118,559

See accompanying notes to financial statements.

PACIFIC SALMON COMMISSION

Statements of Cash Flows

Years ended March 31, 2004 and 2003

	2004	2003
Cash provided by (used in):		
Operations:		
Excess of revenue over expenditures	$ 365,422	$ 361,560
Items not involving cash:		
Amortization	140,088	113,326
Reduction in accrued benefit asset	13,485	4,612
Net change in non-cash operating working capital	469,328	(684,622)
	988,323	(205,124)
Investing:		
Additions to capital assets	(242,107)	(97,546)
Increase (decrease) in cash and cash equivalents	746,216	(302,670)
Cash and cash equivalents, beginning of year	920,205	1,222,875
Cash and cash equivalents, end of year	$ 1,666,421	$ 920,205

See accompanying notes to financial statements.

1. Nature of organization:

The Pacific Salmon Commission was established by Treaty between the Governments of Canada and the United States of America (the "Contracting Parties") to promote cooperation in the management, research and enhancement of Pacific salmon stocks. The Treaty was ratified on March 18, 1985 and renewed on June 30, 1999, and the Commission commenced operations on September 26, 1985.

2. Significant accounting policies:

(a) Basis of accounting:

These financial statements present the financial position and results of operation of the Commission to comply with the requirements of the Treaty between the Government of Canada and the Government of the United States of America concerning Pacific Salmon and may not be appropriate for other purposes. As required, the financial statements are prepared on an accrual basis except that purchase order expenditures are recognized at the time that the commitment for goods and services are made, rather than at the time that the goods or services are delivered.

(b) Fund accounting:

The Commission follows fund accounting procedures, giving recognition to restrictions on the use of resources specified by the Contracting Parties. The Fund classifications are as follows:

(i) The General Fund includes funds provided annually through contributions from the contracting parties and any net surplus obtained through the test fishing program. By agreement of the Parties, any unexpended balance remaining at the end of one fiscal year may be used to offset contributions in the following year or may be used to offset a shortfall between contributions and approved expenditures in the following year.

(ii) The Capital Assets Fund reflects the Commission's capital asset transactions. Amortization is charged to the Capital Fund.

(iii) The Working Capital Fund represents monies contributed by the Parties to be used temporarily pending receipt of new contributions from the Parties at the beginning of a fiscal year, or for special programs not contained in the regular budget but approved during the fiscal year. Any surplus above a pre-determined fixed limit in the account at the end of the fiscal year is transferred to the General fund and is treated as income.

(iv) The Test Fishing Fund is established as a revolving fund in which a portion of net test fishing revenues realized in years of high abundance are reserved to be used to support test fishing programs in year of low abundance and when conservation concerns are an issue.

(v) The Special Research Fund represents monies set aside to fund additional programs as determined by the Contracting Parties, including late run Sockeye initiatives and studies related to Coho and Chinook salmon.

2. Significant accounting policies (continued):

(c) Revenue recognition:

The Commission follows the restricted fund method of accounting for contributions from Contracting Parties. Externally restricted contributions are recognized as revenue in the year in which they are received and the related expenses are incurred. Unrestricted contributions or other income are recognized as revenue when the amount can be reasonably estimated and collection is reasonably assured.

(d) Trust funds:

The Commission administers and holds in trust the Northern Boundary and Transboundary Rivers Restoration and Enhancement Trust Fund and the Southern Boundary Restoration and Enhancement Trust Fund. Accordingly, the trust funds' balances of activities for the year have been excluded from the Commission's financial statements. Expenditures are incurred by the Commission as directed by the respective fund committees. Schedules 1 and 2 provide details of these trust funds' balances and activities for the year.

(e) Portfolio investments:

Portfolio investments are recorded at lower of cost and other than temporary decline in market value.

(f) Capital assets:

Capital assets are stated at cost. Costs of repairs and replacements of a routine nature are charged as a current expenditure while those expenditures which improve or extend the useful life of the assets are capitalized. Amortization is provided using the straight-line method of rates sufficient to amortize the costs over the estimated useful lives of the assets. The rates of amortization used on an annual basis are:

Automobiles	20%
Boats	20%
Computer equipment and software	30%
Equipment	20%
Furniture and fixtures	10%
Leasehold improvements	10%

2. Significant accounting policies (continued):

(g) Income taxes:

The Commission is a non-taxable organization under the Privileges and Immunities (International Organizations) Act (Canada).

(h) Post-employment benefits:

The Commission provides certain employee future benefits, including a defined benefit pension plan, which is funded by the Commission on an annual basis, and severance, life insurance and medical benefits, which are funded by the Commission as they become due.

The Commission accrues its obligations under employee benefit plans and the related costs as benefits are earned, net of returns on plan assets.

The Commission's policies are as follows:

(i) The cost of retirement benefits earned by employees is actuarially determined using the projected benefit method prorated on service and management's best estimate of expected plan investment performance, salary escalation and retirement ages of employees.

(ii) The expected interest cost on any prior service obligation is calculated using management's estimate for the long-term rate of return.

(iii) The expected return on plan assets is calculated at a market-related value for the assets.

(iv) Any cumulative unrecognized actuarial gains and losses in excess of 10% of the projected benefit obligation will be amortized over the expected average remaining service life of the employee group covered by the program.

(v) As at April 1, 2000, the Commission had an estimated transition asset of $26,854, which is being amortized over 15 years, which is the expected average remaining service life of the related employee group.

(i) Foreign exchange translation:

Transactions originating in foreign currencies are translated at the exchange rate prevailing at the transaction dates. Assets and liabilities denominated in foreign currency at the balance sheet date are translated to equivalent Canadian amounts at the current rate of exchange. Foreign exchange gains and losses resulting from translation are included in the determination of excess or deficiency of revenue over expenditures.

2. Significant accounting policies (continued):

(j) Use of estimates:

The preparation of financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Significant areas requiring the use of management estimates relate to the determination of the valuation of accounts receivable, useful lives of capital assets for amortization and accrued liabilities. Actual results could differ from those estimates. Adjustments, if any, will be reflected in operations in the period of settlement.

3. Capital assets:

	Cost	Accumulated amortization	2004 Net book value	2003 Net book value
Automobiles	$ 178,330	$ 145,823	$ 32,507	$ 45,263
Boats	122,532	91,362	31,170	13,527
Computer equipment	613,532	515,140	98,392	59,914
Computer software	155,021	137,477	17,544	7,293
Equipment	715,361	633,887	81,474	44,908
Furniture and fixtures	274,369	244,135	30,234	17,319
Leasehold improvements	59,552	35,997	23,555	24,633
	$ 2,118,697	$ 1,803,821	$ 314,876	$ 212,857

4. General fund balance:

The Commission has approved a carryover of the unexpended funds in the General Fund to be utilized as follows:

	2004	2003
Continuing operations	$ 401,619	$ 153,222
Reserve for prepaid expenses	15,384	15,177
	$ 417,003	$ 168,399

5. Contracting parties:

The Commission's only related parties are the Contracting Parties.

During the fiscal year ended March 31, 2004, the Commission received contributions from Contracting Parties totaling $3,012,884 (2003 - $3,234,013). The Commission made no expenditures on behalf of the Contracting Parties during the year.

6. Employee benefits:

The Commission has a defined benefit plan providing pension and other retirement and post-employment benefits to most of its employees. The amounts presented in this note are actuarial-determined projections:

	Pension Plan	
	2004	2003
Reconciliation of accrued benefit asset (obligation):		
Opening balance	$ (4,444,695)	$ (3,823,336)
Current service cost	(180,341)	(157,664)
Benefits paid	142,925	148,929
Interest cost	(282,184)	(272,461)
Actuarial loss	(103,659)	(340,163)
Ending balance	$ (4,867,954)	$ (4,444,695)
Reconciliation of plan assets:		
Opening balance	$ 3,794,268	$ 3,937,070
Actual return on plan assets	378,057	(151,537)
Employer contributions	103,091	86,098
Employee contributions	77,250	71,566
Benefits	(142,925)	(148,929)
Ending balance	$ 4,209,741	$ 3,794,268
Fund status - deficit	$ (658,213)	$ (650,427)
Unamortized transitional obligation and actuarial gain	656,293	661,992
Accrued benefit asset (obligation)	$ (1,920)	$ 11,565
Discount rate	6.25%	6.5%
Expected long-term rate of return on plan assets	7.00%	7%

6. Employee benefits (continued):

The plan asset portfolio currently comprises equity investments and debt. Equity investments are 56.5% of the portfolio and include Canadian, International and real estate investments. Debt is 43.5% of the portfolio and comprises short-term debt, bonds and mortgages. Asset mix is reviewed periodically and may vary in the future.

The Commission's net benefit plan expense is as follows:

	2004	2003
Current service cost (less employee contributions)	$ 103,091	$ 86,098
Interest cost	282,184	272,461
Expected return on plan assets	(266,908)	(275,901)
Amortization of transitional asset, actuarial gains and losses	(1,791)	(1,791)
Net benefit plan expense	$ 116,576	$ 80,867

7. Financial instruments:

The financial instruments consist of amounts receivable, interest receivable and amounts payable and accrued liabilities. The carrying amounts of these financial instruments are a reasonable estimate of their fair values.

8. Trust funds:

(a) Northern Boundary and Transboundary Rivers Restoration and Enhancement Trust Fund:

The Commission holds contributions in trust for this Fund. The income earned on these contributions is distributed by the Commission as directed by the Northern Enhancement Committee. Schedule 1 provides details of this trust fund's balances and activities for the year.

(b) Southern Boundary Restoration and Enhancement Trust Fund:

The Commission holds contributions in trust for this Fund. The income earned on these contributions is distributed by the Commission as directed by the Southern Enhancement Committee. Schedule 2 provides details of this trust fund's balances and activities for the year.

8. Trust funds (continued):

Summary of trust fund balances and activities:

	2004	2003
Assets:		
Cash and short-term investments	$ 200,519,169	$ 145,702,648
Receivables	5,042	-
	$ 200,524,211	$ 145,702,648
Liabilities and Net Assets:		
Accounts payable and accrued liabilities	$ 268,184	$ 177,842
Fund balances	200,256,027	145,524,806
	$ 200,524,211	$ 145,702,648
Summary of activities:		
Fund balances, beginning of year	$ 145,524,806	$ 157,206,392
Contributions	54,602,760	-
Investment income (loss)	8,622,587	(6,026,726)
Foreign exchange loss	(7,176,864)	(4,574,165)
Fund expenditures	(1,317,262)	(1,080,695)
Fund balances, end of year	$ 200,256,027	$ 145,524,806

KPMG LLP
Chartered Accountants
400 - 625 Agnes Street
New Westminster BC V3M 5Y4

Telephone (604) 527-3600
Telefax (604) 527-3636
www.kpmg.ca

AUDITORS' REPORT ON SUPPLEMENTARY INFORMATION TO THE COMMISSIONERS

We have audited and reported separately herein on the financial statements of Pacific Salmon Commission (the "Commission") as at and for the year ended March 31, 2004.

Our audit was conducted for the purpose of forming an opinion on the financial statements taken as a whole. The Commission holds contributions in trust for the Northern Boundary and Transboundary Rivers Restoration and Enhancement Trust Fund and for the Southern Boundary Restoration and Enhancement Trust Fund. The current year's supplementary information included in Schedules 1 and 2 is presented for purposes of additional analysis and is not a required part of the financial statements. Such supplementary information has been subjected to the auditing procedures applied in the audit of the financial statements and, in our opinion, is fairly stated in all material respects in relation to the financial statements taken as a whole.

KPMG LLP

Chartered Accountants

New Westminster, Canada

May 21, 2004

PACIFIC SALMON COMMISSION

Trust Fund Balances and Activity

Schedule 1

Northern Boundary and Transboundary Rivers Restoration and Enhancement Trust Fund
(stated in Canadian Funds)

March 31, 2004 and 2003

	2004	2003
Assets		
Cash and term deposits	$ 148,663	$ 362,662
Portfolio investments (market value - $112,151,099)	106,865,627	72,479,720
Interest receivable	444	-
Accounts receivable	2,100	-
	$ 107,016,834	$ 72,842,382
Liabilities		
Accounts payable and accrued liabilities	$ 142,706	$ 88,921
Fund balance	106,874,128	72,753,461
	$ 107,016,834	$ 72,842,382

Summary of Activity

	2004	2003
Fund balance, beginning of year	$ 72,753,461	$ 78,597,153
Revenue:		
Contributions	34,126,725	-
Interest	144,019	4,494
Other income	16,800	1,495
Realized gain (loss) on investments	4,472,517	(3,019,026)
	38,760,061	(3,013,037)
Expenditures:		
Salaries and benefits	61,183	58,332
Travel and accommodation	13,048	16,352
Rents and communications	354	479
Contract services	615,777	467,181
	690,362	542,344
Net activity before foreign exchange adjustment	110,823,160	(3,555,381)
Foreign exchange loss	(3,949,032)	(2,288,311)
Fund balance, end of year	$ 106,874,128	$ 72,753,461

PACIFIC SALMON COMMISSION

Trust Fund Balances and Activity

Schedule 2

Southern Boundary Restoration and Enhancement Trust Fund
(stated in Canadian Funds)

March 31, 2004 and 2003

Assets

	2004	2003
Cash and term deposits	$ 146,369	$ 368,369
Portfolio investments (market value - $97,222,744)	93,358,510	72,491,897
Interest receivable	398	-
Accounts receivable	2,100	-
	$ 93,507,377	$ 72,860,266

Liabilities

	2004	2003
Accounts payable and accrued liabilities	$ 125,478	$ 88,921
Fund balance	93,381,899	72,771,345
	$ 93,507,377	$ 72,860,266

Summary of Activity

	2004	2003
Fund balance, beginning of year	$ 72,771,345	$ 78,609,239
Revenue:		
Contributions	20,476,035	-
Interest	95,345	4,349
Other income	16,800	1,495
Realized gain (loss) on investments	3,877,106	(3,019,533)
	24,465,286	(3,013,689)
Expenditures:		
Salaries and benefits	61,183	58,331
Travel and accommodation	4,453	9,959
Rents and communications	184	479
Contract services	561,080	469,492
Materials and supplies	-	90
	626,900	538,351
Net activity before foreign exchange	23,838,386	(3,552,040)
Foreign exchange loss	(3,227,832)	(2,285,854)
Fund balance, end of year	$ 93,381,899	$ 72,771,345

Appendices

Appendix A

Appointment of Officers for 2003/2004

Effective December 1, 2003 a new slate of officers for the Pacific Salmon Commission was identified as follows:

Office	Country	Representative
Commission Chair	U.S.	Mr. Larry Cassidy
Commission Vice-Chair	Can.	Dr. John Davis
Fraser River Panel Chair	U.S.	Mr. Rich Lincoln
Fraser River Panel Vice-Chair	Can.	Mr. Wayne Sato
Northern Panel Chair	U.S.	Vacant
Northern Panel Vice-Chair	Can.	Mr. David Einarson
Southern Panel Chair	U.S.	Mr. Terry Williams
Southern Panel Vice-Chair	Can.	Mr. Ed Lockbaum
Transboundary Panel Chair	U.S.	Mr. Andrew McGregor
Transboundary Panel Vice-Chair	Can.	Mr. Gordon Zealand
Stan. Comm. on F&A - Chair	U.S.	Mr. Rollie Rousseau
Stan. Comm. on F&A - Vice-Chair	Can.	Dr. John Davis
Stan. Comm. on Scientific Cooperation - Chair	Can.	Dr. Laura Richards
Stan. Comm. on Scientific Cooperation - Vice-Chair	U.S.	Mr. Steve Pennoyer
Technical Committee on Data Sharing – Co-Chair	U.S.	Dr. Norma Jean Sands
Technical Committee on Data Sharing – Co-Chair	Can.	Mr. Marc Hamer
Fraser River Panel Technical Committee – Co-Chair	U.S.	Mr. Michael Grayum
Fraser River Panel Technical Committee – Co-Chair	Can.	Mr. Les Jantz
Northern Boundary Technical Committee – Co-Chair	U.S.	Mr. Glen Oliver
Northern Boundary Technical Committee – Co-Chair	Can.	Mr. David Peacock
Transboundary Technical Committee – Co-Chair	U.S.	Mr. Scott Kelley
Transboundary Technical Committee – Co-Chair	Can.	Mr. Sandy Johnston
Enhancement Sub-Committee of the Transboundary Technical Committee – Co-Chair	U.S.	Mr. Ron Josephson
Enhancement Sub-Committee of the Transboundary Technical Committee – Co-Chair	Can.	Mr. Pat Milligan
Joint Technical Committee on Chinook – Co-Chair	U.S.	Mr. Dell Simmons
Joint Technical Committee on Chinook – Co-Chair	Can.	Mr. Rick McNicol
Joint Technical Committee on Coho – Co-Chair	U.S.	Dr. Gary S. Morishima
Joint Technical Committee on Coho – Co-Chair	Can.	Mr. Wilf Luedke
Joint Technical Committee on Chum – Co-Chair	U.S.	Mr. Gary R. Graves
Joint Technical Committee on Chum – Co-Chair	Can.	Mr. Leroy Hop Wo
Selective Fishery Evaluation Committee – Co-Chair	U.S.	Dr. Gary S. Morishima
Selective Fishery Evaluation Committee – Co-Chair	Can.	Dr. Brent Hargreaves

Appendix B

Approved Budget FY 2004/2005

1	**INCOME**	
A.	Contribution from Canada	$1,492,117
B.	Contribution from U.S.	$1,492,117
	Sub total	$2,984,234
C.	Carry-over from 2003/2004	$208,639
D.	Interest	$10,000
E.	Other income	$0
F.	Total Income	$3,202,873
2	**EXPENDITURES**	
A.	1. Permanent Salaries and Benefits	$2,023,409
	2. Temporary Salaries and Benefits	$243,096
	3. Total Salaries and Benefits	$2,266,505
B.	Travel	$113,685
C.	Rents, Communications, Utilities	$136,293
D.	Printing and Publications	$13,100
E.	Contractual Services	$487,216
F.	Supplies and Materials	$61,084
G.	Equipment	$124,990
H.	Total Expenditures	$3,202,873
3	**BALANCE (DEFICIT)**	**$0**
4	**TEST FISHING PROGRAM**	
A.	Forecast Revenues	$547,626
B.	Forecast Expenditures	$539,816
C.	Forecast Balance	$7,810
5	**TOTAL BALANCE (DEFICIT)**	**7,810**

Appendix C

Understanding of the Pacific Salmon Commission concerning Mass Marking and Mark Selective Fisheries – February 2004 Policy Statement and Terms of Reference

The Pacific Salmon Treaty's Memorandum of Understanding (MOU) obliges the Parties to, among other things, "maintain a coded-wire-tag and recapture program designed to provide statistically reliable data for stock assessment and fishery evaluation." The Pacific Salmon Commission (PSC) recognizes that the selective fisheries for marked hatchery coho and chinook salmon can impact the coastwide coded-wire-tag (CWT) program. For the sole purpose of fulfilling this MOU obligation, the PSC has established the following policies and procedures. This policy does not preclude the PSC from evaluating the impacts of, and making recommendations concerning, mass marking or selective fishery plans as they affect the negotiation and establishment of Treaty annex provisions.

- It shall be the policy of the PSC to review proposals for mass marking and selective fisheries to determine consistency with the Parties' commitment to the MOU provisions regarding the reliability of data needed for management of salmon fisheries within the jurisdiction and management area of the Treaty, including whether they impose substantial cost increases for agencies to conduct required data collecting programs.

- The PSC shall establish a Selective Fishery Evaluation Committee (SFEC) to perform the activities set forth in the attached Terms of Reference.

- To facilitate the SFEC review, the Parties shall do their utmost to ensure that their domestic managers submit all proposals for mass marking (MM) and mark selective fisheries (MSF) which could potentially affect stocks or fisheries of concern to the PSC in accordance with the following schedule:

    - Not later than June 1 of each year. Provide early notice containing the agency's plans to consider conducting MSFs over the next 3-5 years.

    - Not later than June 1 of the year prior to implementation. Provide new or substantially changed MM or MSF project proposals.

    - Not later than November 1 of the year prior to implementation. Provide proposals for MM or MSF programs that are anticipated to continue annually without substantive change.

    - Upon completion of domestic fishery planning processes, agencies conducting MSFs are to provide final selective fishery plans.

    - Upon completion of MM programs, agencies are to report the number of fish that were actually mass marked and the extent to which releases are (single and double index) tagged for assessment.

    - Agencies shall report results of MSFs conducted during a season in the annual post-season report provided, using a format specified by the SFEC.

  - Not later than November 30 of the year following conduct of MSFs. Agencies are to report fishery and stock-age-specific estimates of mortalities for unmarked fish impacted by MSFs to the PSC technical committees

- The PSC shall consider, by the annual February PSC meeting, the SFEC reviews of proposals for MM and MSFs and discuss potential actions to address concerns related to any MM or MSF proposals that the SFEC determines will significantly and adversely affect the CWT program.

- The Parties will do their utmost to ensure that MM and MSF proposals are developed in consultation with domestic co-management agencies or processes, and that proposing agencies or entities provide information required by the SFEC and adhere to reporting requirements to enable the PSC technical committees to complete their assignments in a timely manner.

- After the occurrence of a selective fishery and when the data are available, the PSC shall review the management agency report on the actual conduct of the fishery with respect to its impact on the CWT program, and recommend changes and improvements.

Terms of Reference for the Selective Fishery Evaluation Committee

Reporting and Committee Structure: The Selective Fishery Evaluation Committee (SFEC) will report to the PSC and will be comprised of a Steering Committee and two working groups: the Regional Coordination Working Group (RCWG) and the Analytical Working Group (AWG). All official members of the Steering Committee and working groups will be considered members of the SFEC.

A. Steering Committee: The Steering Committee will be comprised of:
   1. the co-chairs of the PSC Coho Technical Committee, Chinook Technical Committee, and Data Sharing Technical Committee;
   2. the co-chairs of the two working groups;
   3. agency mass-marking/selective-fishery coordinators; and
   4. additional agency representatives approved by the responsible Party.

B. Regional Coordination Working Group (RCWG): The RCWG may be comprised of members of the Steering Committee and other PSC technical committees and of the agency representatives approved by the responsible Party. All RCWG members should contribute actively to the work of this group.

C. Selective Fishery Analysis Working Group (SFAWG): The SFAWG may be comprised of members of the Steering Committee and other PSC technical committees and of the agency representatives approved by the responsible Party. All SFAWG members should contribute actively to the work of this group.

II. Duties of the SFEC

A. Serve as a coastwide clearinghouse to facilitate the appropriate level of coordination and reporting on MM and MSF programs among the Parties, affected agencies, and existing coastwide and regional committees established to monitor activities related to the coastwide CWT program;

B. Provide advice to the PSC regarding potential adverse impacts of MM and MSFs on the CWT program;

C. Assess and monitor the cumulative impacts of MSFs on stocks of concern to the PSC;

D. Provide MM or MSF project proponents with information regarding concerns for potential impacts of their projects on the CWT program.

E. Receive and review MM and MSF proposals from the proponent(s) as early in the planning process as possible to identify potential issues and concerns regarding impacts on the CWT program.

F. Establish a technical evaluation process that will:

   1. Review proposed mass-marking/selective-fisheries initiatives developed by the proponent(s) and identify potential impacts on other jurisdictions and the CWT program;

   2. Review, in consultation with relevant PSC technical committees, procedures and protocols for marking, sampling, and evaluation developed by the proponent(s) and, if appropriate, develop and recommend alternative procedures to address potential concerns or measures that could be taken to mitigate for adverse impacts on the CWT program;

   3. Establish standard formats and reporting requirements for agencies conducting MSFs to use when providing post-season information. Review post-season agency evaluations of the performance of MSFs and their estimates of mortalities on stocks of concern to the PSC;

   4. Identify information needs or request modifications of proposals to meet concerns regarding impacts on the CWT program; and

   5. Conduct, at agreed intervals, technical evaluations of mass marking and selective fishery programs in order to assist the Parties to maintain the integrity of the CWT program.

G. Work with PSC Technical Committees to establish formal standards and objectives for a viable CWT program to enable more precise evaluation of potential impacts of MM and MSFs on the viability of the coastwide CWT program and to guide the development of mitigation measures.

H. Specific duties of the Steering Committee include being responsible for overall coordination and prioritization of the activities for the working groups and being the focal point for reporting to the PSC. The agency mass-marking/selective-fishery coordinators should ensure that mass marking and selective fishery proposals are provided to the SFEC in a timely manner.

III. Specific duties of the RCWG, among other related activities, include:

A. Coordinate and report on continuing research on electronic detection and mass marking technologies;

B. Collate and share information on CWT sampling procedures and programs; suggest modifications to sampling and monitoring programs to proponents;

C. Review MM proposals to determine potential impacts on sampling and tagging programs;

D. Provide agencies with a list of MM and MSF proposals received by the SFEC;

E. Provide the necessary liaison with the Data Standards Working Group of the Data Sharing Technical Committee to ensure that necessary modifications are made to PSC data exchange formats to maintain the integrity of the CWT system; and

F. Prepare an annual report summarizing mass marking statistics, index tag groups, and sampling programs for marks and CWTs.

IV. Specific duties of the SFAWG, among other related activities, include:

A. Design marking and sampling strategies that will achieve desired precision for CWT-based estimates;

B. Develop analytical tools for the evaluation, by the SFEC and MSF proponents, of MM programs and MSFs and their potential impacts on the coastwide CWT program;

C. Provide the necessary technical liaison with agencies and other coastwide committees working on selective fishery evaluation models;

D. Review and recommend parameter values for assessing impacts of MSFs;

E. Develop analytical tools for estimating the impacts of MSFs on escapements and exploitation rates for naturally spawning coho and chinook stocks based on post-season information;

F. Review MSF proposals and provide advice to the proponents regarding the design of MSFs and the conduct of sampling and monitoring programs; and

G. Recommend guidelines, procedures, and/or time frames necessary to evaluate the success of MSFs in conserving naturally spawning stocks.

Appendix D

Pacific Salmon Commission Secretariat Staff as of March 31, 2004

EXECUTIVE OFFICE

Don Kowal
Executive Secretary

Teri Tarita
Records Administrator/Librarian

Maia Côté (term)
Secretary

Vicki Ryall
Meeting Planner

Kathy Mulholland
IT Manager

Sandi Wadley
IT Support Specialist

FINANCE & ADMINISTRATION

Kenneth N. Medlock
Finance and Administration

Angus Mackay
Fund Coordinator

Bonnie Dalziel
Accountant

FISHERY MANAGEMENT

Mike Lapointe
Chief Biologist

Jim Gable
Head, Racial Identification Group

Steve Latham
Project Biologist, Sockeye

Bruce White
Project Biologist, Pinks

Keith Forrest
Racial Data Biologist

Maxine Reichardt
Senior Scale Analyst

Julie Volk
Assistant Scale Analyst

Jacqueline Boffey
Scale Lab Assistant

Jim Cave
Head, Stock Monitoring Group

Peter Cheng
Project Biologist, Acoustics

Ian Guthrie
Head, Biometrics

Yunbo Xie
Hydroacoustics Scientist

Andrew Gray
Hydroacoustics Biologist

Fiona Martens
Hydroacoustic Technician (term)

Christine Tovey
Test Fishing Biologist

Appendix E

Membership Lists for Standing Committees, Panels, Joint Technical Committees and other Appointments as of March 31, 2004

1. STANDING COMMITTEE ON FINANCE AND ADMINISTRATION

Dr. John Davis (Vice-Chair)
Mr. Dave Innell
Mr. Alan Boreham

Mr. Rollie Rousseau (Chair)
Mr. W. Ron Allen
Mr. David Bedford
Mr. James Heffernan
Mr. Dave Cantillon

Staff

Mr. Don Kowal (ex. Officio)

Editorial Board

Mr. Tim Young

Mr. Dave Cantillon (acting)

Staff

Mr. Don Kowal (ex. Officio)

2. FRASER PANEL

Mr. Wayne Saito (Vice-Chair)
Mr. Murray Chatwin
Mr. Mike Griswold
Mr. Terry Lubzinski
Chief Ken Malloway
Mr. Larry Wick

Mr. Richard Lincoln (Chair)
Ms. Lorraine Loomis
Mr. Dave Cantillon
Mr. Robert F. Kehoe

FRASER RIVER PANEL - ALTERNATES

Mr. Brian Assu
Mr. Tom Bird
Mr. Randy Brahniuk
Mr. Les Rombough
Mr. Peter Sakich
Mr. Marcel Shepert

Mr. Ronald G. Charles
Mr. Jack R. Giard
Mr. Patrick Pattillo
Mr. Keith C. Schultz

3. SOUTHERN PANEL

Mr. Ed Lochbaum (Vice-Chair)
Mr. John Legate
Dr. Don Hall
Mr. Jeremy Maynard
Mr. Paul Rickard

Mr. Terry Williams (Chair)
Mr. Burnie Bohn
Mr. Peter Dygert
Mr. James E. Harp
Mr. Patrick Pattillo
Mr. Keith E. Wilkinson

SOUTHERN PANEL - ALTERNATES

Mr. Errol Sam
Mr. Barry Rosenberger
Ms. Marilyn Murphy
Mr. Bill Pirie
Mr. Stan Watterson

Mr. Larry Carpenter
Mr. Neal Coenen
Mr. Richard Lincoln
Mr. Randy A. Settler
Mr. Robert Wunderlich
Mr. Andy Whitener

4. NORTHERN PANEL

Mr. Dave Einarson (Vice-Chair)
Mr. Bill de Greef
Mr. John Murray
Mr. John McCulloch
Mr. Greg Taylor
Mr. Chris Barnes

Mr. William F. Auger
Mr. James E. Bacon
Mr. William Hines
Mr. Howard Pendell

NORTHERN PANEL - ALTERNATES

Mr. John Brockley
Chief Harry Nyce Sr.
Ms. Deborah Jeffrey
Mr. Rick Haugan
Ms. Pat Moss
Mr. Bruce Shepherd

Mr. Arnold Enge
Dr. Jack Helle
Mr. Dennis Longstreth
Mr. Robert M. Thorstenson
Mr. Thomas Brookover

5. TRANSBOUNDARY PANEL

Mr. Gordon Zealand (Vice-Chair)
Mr. Ronald Chambers
Mr. Stephan Jacobs
Mr. Ray Kendel
Ms. Cheri Frocklage
Mr. John Ward

Mr. Andrew McGregor (Chair)
Mr. James Becker
Mr. Andrew Ebona
Mr. Arnold Enge
Mr. William Hines
Mr. Stanley D. Malcom
Mr. Richard Davis

6. STANDING COMMITTEE ON SCIENTIFIC COOPERATION

Dr. Laura Richards (Chair)
Dr. Dick Beamish

Mr. Steve Pennoyer (Vice-Chair)
Dr. David Hankin

7. NORTHERN FUND COMMITTEE

Mr. John Lubar (Co-Chair)
Mr. Ron Fowler
Mr. Gordon Zealand

Mr. Jim Balsiger (Co-Chair)
Mr. David Bedford
Mr. Jev Shelton

8. SOUTHERN FUND COMMITTEE

Mr. Ron Kadowaki (Co-Chair)
Dr. Don Hall
Mr. William Otway

Mr. Rollie Rousseau (Co-Chair)
Mr. Larry Rutter
Mr. Olney Patt Jr.

9. JOINT TECHNICAL COMMITTEE ON CHINOOK

Dr. Rick McNicol (Co-Chair)
Dr. Gayle Brown
Mr. Wilf Luedke
Ms. Karen Mathias
Mr. Chuck Parken
Mr. Julian Sturhahn
Dr. Arlene Tompkins
Mr. Ivan Winther

Mr. Dell Simmons (Co-Chair)
Mr. David Bernard
Mr. John Carlile
Dr. John H. Clark
Mr. Gary R. Freitag
Ms. Pam Goodman
Mr. Charles M. Guthrie
Mr. Edgar Jones
Dr. Robert Kope
Mr. Brian Lynch
Ms. Marianne McClure
Mr. Scott McPherson
Mr. Scott Marshall
Dr. Gary S. Morishima
Mr. James F. Packer
Mr. Joseph Polos
Mr. Rishi Sharma
Mr. Alex C. Wertheimer
Mr. Hal Weeks
Mr. Henry J. Yuen
Mr. Shijie Zhou

10. JOINT TECHNICAL COMMITTEE ON COHO

Mr. Wilf Luedke (Co-Chair)
Mr. Richard Bailey
Ms. Diana Dobson
Dr. Blair Holtby
Ms. Karin Mathias
Mr. Chuck Parken
Mr. Kent Simpson
Ms. Melanie Sullivan
Mr. Joe Tadey
Dr. Arlene Tompkins
Mr. Pieter Van Will

Dr. Gary S. Morishima (Co-Chair)
Ms. Carrie Cook-Tabor
Mr. Robert A. Hayman
Mr. Jeff Haymes
Dr. Peter W. Lawson
Mr. Curt Melcher
Mr. James B. Scott
Ms. Laurie Weitkamp

(Northern Coho)

Dr. John H. Clark
Ms. Michele Masuda
Mr. Leon D. Shaul

11. JOINT TECHNICAL COMMITTEE ON CHUM

Mr. Leroy Hop Wo (Co-Chair)
Mr. Wilf Luedke
Mr. Clyde Murray
Ms. Melanie Sullivan
Mr. Pieter Van Will

Mr. Gary R. Graves (Co-Chair)
Ms. Angelika Hagen-Breaux
Mr. Nick Lampsakis
Mr. Thomas Kane
Dr. Gary Winans

12. TECHNICAL COMMITTEE ON DATA SHARING

Mr. Marc Hamer (Co-Chair)
Ms. Lia Bijsterveld
Ms. Sue Lehmann

Dr. Norma Jean Sands (Co-Chair)
Dr. Ken Johnson
Mr. Ron Josephson
Mr. Mike Matylewich
Dr. Gary S. Morishima
Mr. Dick O'Connor
Mrs. Amy Seiders

Working Group on Data Standards

Mr. Marc Hamer (Co-Chair)
Ms. Brenda Adkins
Ms. Kathryn Fraser

Dr. Ken Johnson (Co-Chair)
Mr. P. Brodie Cox
Mr. William Johnson
Mr. John Leppink
Mr. Ken Phillipson

13. FRASER RIVER PANEL TECHNICAL COMMITTEE

Mr. Les Jantz (Co-Chair)
Mr. Jeff Grout
Mr. Alan Cass
Mr. Ron Goruk
Mr. Mike Staley

Mr. Michael Grayum (Co-Chair)
Ms. Angelika Hagen-Breaux
Mr. Chris Wright

14. NORTHERN BOUNDARY TECHNICAL COMMITTEE

Mr. David Peacock (Co-Chair)
Mr. Dana Atagi
Mr. Mark Potyrala
Mr. Steve Cox-Rogers

Mr. Glen Oliver (Co-Chair)
Mr. Phillip S. Doherty
Mr. Gary R. Freitag
Dr. Jerome J. Pella
Mr. John Wilcock
Mr. Steve Heinl
Mr. Xinxian Zhang
Mr. William Heard

15. SELECTIVE FISHERY EVALUATION COMMITTEE

Dr. Brent Hargreaves (Co-Chair)
Ms. Sue Lehmann

Dr. Gary S. Morishima (Co-Chair)
Ms. Carrie Cook-Tabor
Mr. Doug Milward
Mr. Harold Geiger
Mr. Mark Kimbel
Dr. Annette Hoffmann
Mr. Ken Johnson
Mr. Ron Josephson
Mr. Ron Olson
Mr. Patrick Pattillo
Dr. Norma Jean Sands
Mr. Rishi Sharma
Mr. Dell Simmons
Dr. Marianna Alexandersdottir
Mr. Greg Mauser

16. TRANSBOUNDARY TECHNICAL COMMITTEE

Mr. Sandy Johnston (Co-Chair)
Mr. Ian Boyce
Mr. Pete Etherton
Mr. Rick Ferguson
Mr. Bill Waugh

Mr. Scott Kelley (Co-Chair)
Mr. Jim Andel
Mr. William R. Bergmann
Mr. Kevin Monagle
Mr. Troy Thynes
Ms. Kathleen A. Jensen
Mr. Edgar Jones
Mr. Keith Pahlke
Mr. Gordon Woods
Mr. John Joyce

ENHANCEMENT SUB-COMMITTEE

Mr. Pat Milligan (Co-Chair)
Dr. Kim Hyatt
Mr. Paul Rankin

Mr. Ron Josephson (Co-Chair)
Mr. Eric Prestegard
Mr. Steve Reifenstuhl

17. JOINT CHINOOK INTERFACE GROUP

Mr. Gerry Kristianson (Chair)
Mr. Ron Fowler
Mr. Russ Jones
Mr. Jev Shelton (Vice-Chair)
Mr. Larry Cassidy
Mr. Olney Patt Jr.

18. NATIONAL CORRESPONDENTS

Mr. Alan Boreham
Mr. Dave Cantillon (acting)